



In cooperation with Minnesota Agricultural Experiment Station

# Soil Survey of Roseau County, Minnesota



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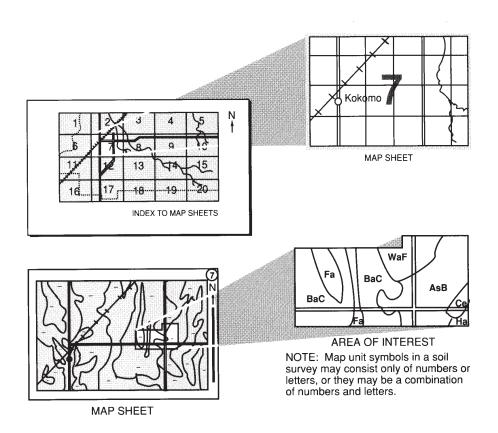
## **How To Use This Soil Survey**

The detailed soil maps can be useful in planning the use and management of small areas.

To find information about your area of interest, locate that area on the **Index to Map Sheets**. Note the number of the map sheet and turn to that sheet.

Locate your area of interest on the map sheet. Note the map unit symbols that are in that area. Turn to the **Contents**, which lists the map units by symbol and name and shows the page where each map unit is described.

The **Contents** shows which table has data on a specific land use for each detailed soil map unit. Also see the **Contents** for sections of this publication that may address your specific needs.



This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (formerly the Soil Conservation Service) has leadership for the Federal part of the National Cooperative Soil Survey.

Major fieldwork for this soil survey was completed in 1998. Soil names and descriptions were approved in 1999. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1998. This survey was made cooperatively by the Natural Resources Conservation Service and the Minnesota Agricultural Experiment Station. It is part of the technical assistance furnished to the Roseau County Soil and Water Conservation District.

Soil maps in this survey may be copied without permission. Enlargement of these maps, however, could cause misunderstanding of the detail of mapping. If enlarged, maps do not show the small areas of contrasting soils that could have been shown at a larger scale.

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Cover: This historic silo is all that remains of the town of Winner. This area was homesteaded during the early 1900's but is now part of the Beltrami Island State Forest. The Winner silo is in an area of Faunce loamy fine sand, 0 to 3 percent slopes.

Additional information about the Nation's natural resources is available on the Natural Resources Conservation Service homepage on the World Wide Web. The address is http://www.nrcs.usda.gov.

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### **Foreword**

This soil survey contains information that affects land use planning in this survey area. It contains predictions of soil behavior for selected land uses. The survey also highlights soil limitations, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

This soil survey is designed for many different users. Farmers, foresters, and agronomists can use it to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the survey to plan land use, select sites for construction, and identify special practices needed to ensure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the survey to help them understand, protect, and enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. The information in this report is intended to identify soil properties that are used in making various land use or land treatment decisions. Statements made in this report are intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are shallow to bedrock. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

These and many other soil properties that affect land use are described in this soil survey. The location of each soil is shown on the detailed soil maps. Each soil in the survey area is described, and information on specific uses is given. Help in using this publication and additional information are available at the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

William Hunt State Conservationist Natural Resources Conservation Service

## Soil Survey of Roseau County, Minnesota

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#### **How This Survey Was Made**

This survey was made to provide information about the soils and miscellaneous areas in the survey area. The information includes a description of the soils and miscellaneous areas and their location and a discussion of their suitability, limitations, and management for specified uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They dug many holes to study the soil profile, which is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

The soils and miscellaneous areas in the survey area are in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind or segment of the landscape. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landscape, soil scientists develop a concept, or model, of how the soils were formed. Thus, during mapping, this model enables the soil scientists to predict with a considerable degree of accuracy the kind of soil or

miscellaneous area at a specific location on the landscape.

Individual soils on the landscape commonly merge into one another as their characteristics gradually change. To construct an accurate map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size, and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, soil reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the

same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

The descriptions, names, and delineations of the soils in this survey area do not fully agree with those of the soils in adjacent survey areas. Differences are the result of a better knowledge of soils, modifications in series concepts, or variations in the intensity of mapping or in the extent of the soils in the survey areas.

Soil scientists were denied access to a few scattered tracts in the county. These areas were mapped using knowledge of adjacent mapping and remote sensing techniques. Mapping in these areas may be less accurate than in the areas where soil scientists were allowed entry and could carefully examine the soils.

#### **General Nature of the Survey Area**

Roseau County is in northwestern Minnesota (fig. 1). The county has a total area of 1,073,900 acres. Roseau is the county seat. Major industries include manufacturing, farming, logging, and tourism.

Soils in the survey area formed on a glacial lake plain that slopes gently to the northwest. The original vegetation was generally tall grass prairie in the western two-thirds of the county and coniferous and hardwood forest in the eastern one-third. Peatland occurs throughout the survey area.

For the purposes of this survey, soil scientists have identified 84 different types of soil. The soils vary greatly in their attributes and limitations.

This soil survey updates the first soil survey of Roseau County published in 1942 (USDA, 1942). It provides additional information and has larger maps, which show the soils in greater detail.

#### **History and Development**

The staff of the Roseau County Museum assisted in the preparation of this section.

The earliest inhabitants of the county were the Sioux, who at one time occupied all of northern Minnesota. In the 1700's, they were forced west onto the prairie by the Chippewa, who invaded from the east and settled the northern Minnesota woodlands.

La Verendrye, a Frenchman who explored the region between 1732 and 1749, named the main river in the area "la Riviere aux Roseaux," which means "the River of Rushes." The name "Roseau" is derived from that first description of the river.

For more than 100 years after La Verendrye's exploration, activity in the area consisted primarily of hunting and trapping. The Hudson's Bay Company had a temporary post on the Roseau River, and the American Fur Company had one on the Warroad River.

In the early 1880's, settlers began to arrive in the area. Travel from the east was restricted because of nearly impenetrable bogs and marshland; therefore, most settlers came from the Red River Valley by way of the Sandridge Trail. This trail followed a high gravel beach (a former shoreline of Glacial Lake Agassiz) and allowed easier access to the area than was possible through the surrounding, more swampy lowlands. Consequently, the settlers first chose land along the Roseau River and then gradually moved east, settling the region around Warroad in the 1890's.

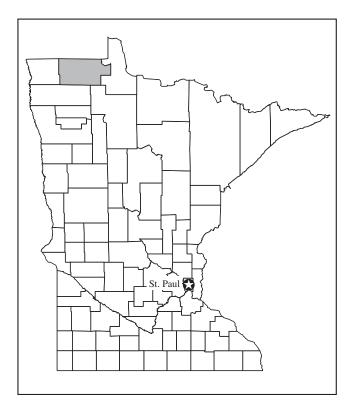


Figure 1.—Location of Roseau County in Minnesota.

Although there were many obstacles in the form of insects, poor drainage, harsh winters, a short growing season, and lack of money, the area had many resources as well. Game, fish, and wild berries were plentiful, and there was abundant timber for building purposes. Little by little the land was broken, crops were planted, fields were made bigger, and dairy herds were enlarged. Small communities began to dot the landscape as the pioneers became more established.

The village of Roseau was platted in 1892 and incorporated on December 31, 1894. The village of Warroad, whose name came from the French "road of war" and Indian "dark and bloody end of the trail," was incorporated November 9, 1901, and platted in the fall of 1902. Roseau County was established on December 31, 1894, by proclamation of the governor. At that time Kittson County was redistricted, contributing 30 townships to Roseau County. On February 11, 1896, 15 more townships were annexed from Beltrami Territory.

By 1900, two issues were sources of concern to the agricultural community: land drainage and transportation. Although the higher land produced profitable crops, high land was not abundant, and

many farmers began agitating for drainage of lowlands to produce more farmland. At the turn of the 20th century, the State Legislature enacted laws allowing land drainage and Roseau County began a program of ditching to produce more farmable acres. Drainage has continued to be a concern for the area ever since that time.

The second concern, transportation, became an issue as soon as it became clear that the land would produce more grain than was necessary for subsistence. In order for the farmers to make a cash profit, the grain had to be shipped to outside markets. Most people thought a railroad would be built as soon as the need became evident. However, it took 9 years of negotiations with the railroad baron James J. Hill, who felt some animosity toward the eastern end of the county, before the Great Northern was built. In the meantime, the Canadian Northern built its Winnipeg route through Warroad in 1901. The Great Northern was finally built as far as Greenbush in 1904, but it was not extended through Roseau and into Warroad until 1908.

Agriculture provided the primary economic base to the county through the first half of the 20th century. In the era following World War II, however, two industries were started that have had an increasingly large impact on the economy of the county. A lumber yard in Warroad, which manufactured ammunition boxes during the war, was converted first into a sash and door factory and finally to a window manufacturing firm as its owners looked for new markets after World War II. Soon after, in the 1950's, a small company that began producing snowmobiles and later expanded to produce all-terrain vehicles and personal watercraft was started in Roseau. These two businesses expanded rapidly in the last few decades of the 20th century and helped to provide a broad economic base for the county. Agriculture continues to contribute to the economy, primarily producing small grain crops, oil seed, grass seed, beef cattle, and turkeys.

In 1995, the county had a population of approximately 15,000. The population of Roseau was 2,800, and that of Warroad was 1,800. The towns of Badger and Greenbush each had a population of less than 1,500. Nine other towns in the county had a population of less than 250.

#### **Transportation Facilities and Markets**

Two railroads provide service to Roseau County.

The Canadian National Railroad passes around Lake of the Woods and serves Warroad and Roosevelt. The

Minnesota Northern Railroad provides rail service to Greenbush, Badger, Roseau, Salol, and Warroad.

Roseau County has an extensive road system. State Highway 11 crosses the county from east to west. State Highways 32, 89, 310, and 313 provide north-south access. These highways and a number of paved county roads connect additional gravel and forest roads and provide access to trading centers.

Grain is shipped via truck and rail to Duluth and by truck to local elevators. Beef and feeder cattle are trucked to market in West Fargo and South St. Paul. Milk is shipped to Thief River Falls. Timber is hauled by truck and rail to Bemidji, International Falls, and Grand Rapids.

Airports are located in both Roseau and Warroad, and the county has an area transit service.

#### Geology, Physiography, and Drainage

The landscape of Roseau County is a legacy of the most recent glaciation associated with the Pleistocene Epoch, also known as the Great Ice Age. During the Ice Age, which dates from approximately 2 million years ago, Minnesota was covered by at least four major glaciations. The most recent glacial interval, known as the Wisconsin Age, occurred from approximately 65,000 years before present (B.P.) to 10.000 B.P.

As each ice sheet advanced and retreated across Minnesota, it eroded or covered previously deposited materials, effectively removing most traces of earlier glaciation. Thus, the Wisconsin Age glaciers and glacial lakes are responsible for most of the current landscape in Minnesota. The last glacier to advance across the area was the Des Moines lobe of the Laurentide Ice Sheet, which was centered in the Hudson Bay region (Wright, 1973). The Des Moines lobe deposited fragmented calcareous material, eroded from the marine sediments of the Manitoba lowlands, across northwestern Minnesota. These glacial deposits, known as "till" or "drift," consist mainly of an unsorted and unstratified mixture of clay, silt, sand, and gravel. With the exception of a few granitic outcrops south of Lake of the Woods, bedrock in Roseau County is completely covered by glacial drift. In the eastern part of the county, the drift averages about 100 feet in depth; toward the west the depth increases to a little more than 200 feet. During the final retreat of the Des Moines lobe, water ponded along the southern end of the glacier, forming a vast freshwater lake known as Lake Agassiz. Initially, this lake did not have an outlet to the north because the

ice blocked the water's natural flow path to the Hudson Bay. Its first outlet was in the south, through the Lake Traverse-Big Stone Lake Gorge on the present-day border between South Dakota and Minnesota (Nikiforoff, 1947).

As the ice retreated into Canada, the lake changed dimensions several times (Nikiforoff, 1947). At its greatest extent, Lake Agassiz covered approximately 80,000 square miles (International Coalition for Land and Water Stewardship in the Red River Basin, 1989). It covered parts of Minnesota and the Dakotas early in its existence and then much of Manitoba and parts of Saskatchewan and Ontario as the ice retreated toward the Hudson Bay region. Through all its phases, Lake Agassiz existed for approximately 4,000 years, from 11,500 B.P. to 7,500 B.P. It left in its wake some of the flattest landscapes on the earth's surface (Schwartz and Thiel, 1954).

Waves and currents of Lake Agassiz reworked the glacial drift that it covered, eroding the finer particles from the higher areas and depositing them as lacustrine sediments in the lower areas. Lake sedimentation is typically determined by the turbulence of the water. Fine particles settle out in very calm areas, and coarser particles settle out in choppier water. The general scheme of zonation of sediments in a glacial lake is as follows: The lowest part of a lake basin is occupied by the lacustrine clay. Next to this is a belt of silty sediments that grades without a sharp line of demarcation into sandy deposits. Outside of the sandy zone is a region of the modified till covered by a layer of the wave-washed gravel (lag lines), and beyond this is the area of slightly modified till. Along shores with strong wave action, beach ridges are built up. These ridges are steeper and coarser on the lake side because of subsequent wave erosion of the finer materials. Along shores with shallow water and substantial amounts of aquatic vegetation, wave action is insufficient for the development of beaches.

The origin of the lacustrine deposits in Roseau County is more complex than the formation described above. The level of Lake Agassiz dropped several times, resulting in clay and silt deposits being overlain by sands and gravels as deep, calm pools became more shallow and had choppier waters.

Remnants of four major beach ridges associated with Glacial Lake Agassiz can be observed in northern Minnesota, and three of them are in Roseau County. The beach ridges are composed of sand and fine gravel, whereas the surrounding areas are composed of either till deposits or lacustrine deposits. Although

some areas can be identified as being predominantly till or predominantly lacustrine, other areas are a complex mixture of the two.

The first stable shoreline for Lake Agassiz is defined by the Herman Beach Ridge, which runs to the southwest of Roseau County. When Lake Agassiz was at the Herman Beach level, all of Roseau County was under water. As the glacier continued to melt and recede, the lake grew larger. This growth put more pressure on the southern outlet, which consequently eroded to a lower level and dropped the lake level. While it was still being drained by the southern outlet, the lake was lowered three times, thus creating the Norcross, Tintah, and Campbell beach ridges.

At the first lowering of Lake Agassiz, Beltrami Island emerged in the southeast corner of Roseau County. The most prominent beach ridge in Roseau County is on the northern side of Beltrami Island. This site is locally called Bemis Hill and is more than 60 feet high. It is a phase of Norcross Beach (Wahlberg, 1975).

Further lowering of the southern outlet brought the lake down to the level of Tintah Beach, portions of which can still be seen to the west of Highway 89 in the southern part of the county. During the time of Tintah Beach, much of the southern and southeastern parts of the county emerged as dry land and the Roseau River came into existence.

The final level of the lake, while it still drained from the southern outlet, is defined by Campbell Beach. In Roseau County this beach ridge can be seen running northeastward through Greenbush, Badger, and Fox to a point about 4 miles west of Roseau. Through most of its course across the county, this ridge is one-fourth to one-half mile wide and is 10 to 30 feet high. Like the other ridges, it is composed of sand and fine gravel. Pebbles of limestone are common in the gravel.

Eventually the ice front melted north to a point where outlets in that direction were again provided, and the southern outlet was permanently abandoned. Lake Agassiz was eventually fully drained, but remnants of it still exist. Upper and Lower Red Lakes (Beltrami County) and Lake of the Woods occupy a part of the old lake bottom.

The last part of Roseau County to become dry land was a broad strip south of the Manitoba boundary extending from Lake of the Woods to northeastern Kittson County. Much of this area is or was covered by thick beds of peat. During the withdrawal of water, a number of large and small lagoons were left scattered throughout the uncovered area. Except for the Red Lakes, very few of them were more than 10 feet deep (although several lagoons occupied areas of many

square miles each). Practically all these lakes and lagoons were gradually filled with peat. The peat deposits are typically not more than 8 feet thick and generally rest on till, although in many places a thin layer of wave-washed gravel or sand separates the peat from the underlying till.

The highest point of Roseau County is in the southeast, where a portion of Beltrami Island has an elevation of 1,270 feet (Wahlberg, 1975). The general slope and drainage of the county are toward the northwest. The Roseau River, the principal stream, begins near the southeast corner and leaves the county at its lowest point near the northwest corner, at an elevation of about 1,000 feet above sea level. The southwestern part of the county is drained by Two Rivers, and the extreme eastern end is drained by the Warroad River, which flows into Lake of the Woods.

#### Climate

Table 1 gives data on temperature and precipitation for the survey area as recorded at Roseau in the period 1961 to 1990. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on the length of the growing season.

In winter, the average temperature is 4.6 degrees F and the average daily minimum temperature is -6 degrees. The lowest temperature on record, which occurred at Roseau on February 18, 1966, is -48 degrees. In summer, the average temperature is 63.9 degrees and the average daily maximum temperature is 76.7 degrees. The highest temperature, which occurred at Roseau on June 8, 1970, is 98 degrees.

Growing degree days are shown in table 1. They are equivalent to "heat units." During the month, growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (40 degrees F). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

The total annual precipitation is 20.52 inches. Of this total, 12.35 inches, or 60 percent, usually falls in June through September. The growing season for most crops falls within this period. The heaviest 1-day rainfall during the period of record was 5.07 inches at Roseau on September 2, 1957. Thunderstorms occur on about 32 days each year, and most occur in July.

The average seasonal snowfall is 35.3 inches. The greatest snow depth at any one time during the period of record was 38 inches recorded on March 5, 1966.

On an average, 140 days per year have at least 1 inch of snow on the ground. The heaviest 1-day snowfall on record was 12 inches recorded on January 7, 1989.

The average relative humidity in midafternoon is about 62 percent. Humidity is higher at night, and the

average at dawn is about 81 percent. The sun shines 64 percent of the time possible in summer and 49 percent in winter. The prevailing wind is from the west. Average windspeed is highest, 10.1 miles per hour, in April.

Table 1.--Temperature and Precipitation
(Recorded in the period 1961-90 at Roseau, Minnesota)

	 				   Precipitation						
	'   			2 years			<u> </u> 	2 years	s in 10	   	   
Month	Average   daily  maximum 	daily	İ	Maximum	Minimum  temperature  lower  than	Average  number of   growing   degree   days*		Less		Average   number of   days with   0.10 inch   or more	snowfall
	°F	°F	°F	°F	°F	Units	In	In	In		In
January	   10.7 	   -10.7 	   0.0 	   38 	-42	   0 	   0.74 	0.16	   1.20 	   2 	   9.1 
February	18.6	-4.8	6.9	41	-37	0	.44	.18	.71	1	4.2
March	   32.3 	   9.6 	   20.9 	   58 	-29	   5 	   .63 	.25	   1.06 	   2 	   5.3 
April	50.7	27.2	39.0	79	-1	102	1.39	.66	2.11	3	3.3
May	   66.1 	   38.8 	   52.5 	   88 	   18	   395 	   2.26	1.04	   3.30	   5 	   .2
June	74.0	48.5	61.3	90	30	637	3.67	2.16	5.02	7	.0
July	   78.6 	   53.5 	   66.0 	   92 	   36	   799 	   3.27 	2.12	   4.31	   6 	   .0
August	77.5	51.1	64.3	93	32	749	3.04	1.26	4.54	5	.0
September	   66.3	   42.0 	   54.2 	   89	   20	   425 	2.37	.99	   3.53	   5 	   .0
October	53.9	32.2	43.0	79	11	167	1.34	.52	2.03	3	.6
November	   33.1 	   16.1 	   24.6 	   61 	-19	   12 	   .65	.31	   1.00	   2 	   4.4 
December	16.2	-2.6	6.8	42	-36	0	.72	.36	1.04	2	8.1
Yearly:	   	   	   	 	 	   	   		   	    -	   
Average	48.2	   25.1 	   36.6	 		 	 			 	 
Extreme	98	   -48	 	95	-48	 	 		 	 	 
Total	 	   	   	 		   3,292 	   20.52 	12.19	   24.54 	   43 	   35.3 

<sup>\*</sup> A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (40 degrees F).

Table 2.--Freeze Dates in Spring and Fall
(Recorded in the period 1961-90 at Roseau, Minnesota)

İ	Temperature						
Probability	24 °F	28 °F	   32 °F				
	or lower	or lower	or lower				
Last freezing   temperature   in spring:			     				
1 year in 10   later than	May 21	   May 31	     June 14				
2 years in 10   later than	May 15	   May 27	     June 9				
5 years in 10   later than	May 5	   May 18	     May 29				
First freezing   temperature   in fall:			 				
1 year in 10   earlier than	Sept. 17	   Sept. 8	     Aug. 18				
2 years in 10   earlier than	Sept. 22	   Sept. 11	     Aug. 25				
5 years in 10   earlier than	Oct. 3	   Sept. 21	   Sept. 7				

	-	nimum temper growing sea	
Probability		[	[
	Higher	Higher	Higher
	than	than	than
	24 °F	28 °F	32 °F
	Days	Days	Days
9 years in 10	125	108	73
8 years in 10	134	114	82
5 years in 10	151	126	99
2 years in 10	167	138	116
1 year in 10	176	144	125

## Formation and Classification of the Soils

This section relates the soils in the survey area to the major factors and processes of soil formation and describes the system of soil classification.

#### Factors of Soil Formation

Soil is a three-dimensional natural body consisting of mineral and organic material that can support plant growth. The nature of any soil at a given site is the result of the interaction of five major factors—parent material, climate, plants and animals, relief, and time (Jenny, 1941). Climate and plants and animals have an effect on parent material that is modified by relief over time. Theoretically, if all these factors were identical at different sites, the soils at these sites would be identical. Differences among the soils are caused by variations in one or more of these factors.

#### **Parent Material**

Parent material is the raw material acted on by the soil-forming processes. It largely determines soil texture, which in turn affects other properties, such as natural soil drainage and permeability. The physical and chemical composition of parent material has an important influence on the kind of soil that forms.

The soils in Roseau County are derived from the calcareous, loamy glacial till deposited during the last glaciation. This glacial till was later modified and reworked by Glacial Lake Agassiz, which covered the area after the glacier receded. Loamy glacial till underlies all of the present glacial lake sediment and is at or near the surface throughout most of the county. The differences in the depth of these glacial deposits account for many of the differences in the soils.

Soils in the eastern part of the county, around Lake of the Woods, formed primarily in material deposited by the waters of Glacial Lake Agassiz. Lacustrine silt and clay were deposited in deep lake basins, and lacustrine sand was deposited on sandbars and deltas in interbeach areas. Wabanica and Warroad soils are common in this area.

The western two-thirds of the county is dominated by Percy soils, which formed in loamy till. Rock fragments are scattered over the surface and throughout the till. It is not uncommon for soils in this area to have thin glaciofluvial deposits overlying the till. Boash soils have a thin clayey mantle, and Strandquist soils have a layer of gravelly sand overlying the loamy glacial till.

Beach ridges and sandbars were left throughout the county after Glacial Lake Agassiz receded. The most extensive area of beach ridges and sandbars is in the southeastern part of the county in the Beltrami Island State Forest. Differences between the various sandy soils are based largely on the size of the sand particles, the content of rock fragments, and the chemical properties of the sands.

Organic soils occur throughout Roseau County and cover approximately one-third of the county (Minnesota Department of Natural Resources, 1979). These soils formed in herbaceous and woody plant remains. The degree of decomposition and the thickness of the organic material largely account for the differences among the organic soils.

Alluvium is soil material deposited by floodwater along streams. The texture of the soil material varies, depending on the speed of the floodwater, the duration of flooding, and the distance from the streambank. Soils that formed in recent alluvium can be highly stratified. The soil horizons are weakly expressed because the soil-forming processes are interrupted with each new deposition. The source of the alluvium generally is material eroded from the other soils farther upstream in the watershed.

#### **Climate**

The climate in Roseau County has significantly affected the soil-forming processes. Climatic factors, such as precipitation and temperature, have influenced the existing plant and animal communities and the physical and chemical weathering of the parent material. Physical and chemical processes are the principal factors affecting the development of soil profiles.

Roseau County has a cool, subhumid climate characterized by a wide variation in temperature between summer and winter. Except for the effects of frost action, soil-forming processes are essentially

dormant during the winter. Soil may be frozen to a depth of 3 to 5 feet for a period of 6 months.

Climate has the most pronounced effect on soil-forming processes during the growing season. The amount of rainfall influences the rate at which soluble and colloidal materials are removed from the upper part of the soil profile and deposited in the lower part. Under perennially wet and cool conditions, the decomposition of vegetation is inhibited and peat accumulates. There is slightly more precipitation in the eastern part of the county than in the western part. This difference in precipitation has affected the types of native vegetation. Soils in the western two-thirds of the county formed under prairie vegetation, and most of the soils in the eastern one-third formed under forest vegetation.

#### **Plants and Animals**

The vegetation under which a soil forms influences soil properties, such as color, structure, reaction, and content and distribution of organic matter. Vegetation extracts water from the soil, recycles nutrients, and adds organic material to the soil. Gases derived from root respiration combine with water to form acids that influence the weathering of minerals. Because of a lower content of organic matter, soils that formed under forest vegetation are generally lighter colored than those that formed under grasses.

At the time Roseau County was settled, much of the native vegetation consisted mainly of tall grass prairie. In the prairie environment, there is a large annual accumulation of organic material. Bacteria decompose the plant remains and make nitrogen available for more vigorous plant growth. Soils that formed under grassland generally are darker, have a higher water-holding capacity, and are more fertile than soils that formed under forest vegetation.

Forest vegetation in the area ranges from pine forests, which grow on the sandy soils, to mixed hardwoods, which grow on the heavier textured soils. The mineral content of the vegetation influences soil characteristics through nutrient cycling. The litter of deciduous trees is higher in bases, such as calcium and magnesium, than that of coniferous trees; therefore, soil acidity is more likely under coniferous vegetation.

Plant communities in the bogs range from reeds and sedges to dense forests. Water depth and movement during the year are major factors in determining the type of plants that develop and how well they grow on a certain site. The type of vegetation influences the degree of decomposition, which affects

fertility, aeration, and the retention and movement of water.

Bacteria, fungi, and many micro-organisms decompose organic material and release nutrients to growing plants. They influence the formation of peds. Soil properties, such as drainage, temperature, and reaction, influence the type of micro-organisms that live in the soil. Microbes participate in many organic and chemical transactions in the soil that are vital to the support of higher plants.

Earthworms, insects, and small burrowing animals mix the soil and create small channels that influence soil aeration and the percolation of water. Earthworms help to incorporate crop residue or other organic material into the soil.

Human activities have significantly influenced soil formation. Tall grass prairie and native forest have been cleared and developed for farming and other uses. Cultivation has accelerated erosion on sloping soils; wet soils have been drained; organic soils have been burned; and manure, chemical fertilizer, and pesticides have been applied in cultivated areas. Cultivation has affected soil structure and compaction and reduced the content of organic matter.

#### Relief

Relief influences soil formation mainly through its effect on runoff and erosion. To a lesser extent, it also influences soil temperature, the plant cover, the depth to a zone in which the soil moisture status is wet, and the accumulation and removal of organic matter.

Relief can differentiate soils that formed in the same kind of parent material because it causes differences in external soil drainage. Water that runs off the more sloping soils can collect in depressions or swales. Garnes, Chilgren, and Haug soils all formed in loamy till. The gently sloping Garnes soils are in slightly elevated, rounded areas and are moderately well drained. They are in areas where external drainage is generally good. Chilgren soils are in nearly level areas and are poorly drained. Haug soils are in swales or depressions. They are very poorly drained and have a thick organic surface layer.

Since the topography in Roseau County is level to gently sloping, most of the soils are poorly drained, have a high content of organic matter, and are mottled to varying degrees. Relief becomes more pronounced on the beach ridges, which formed through the wave action of Glacial Lake Agassiz. The sandy and gravelly soils in these areas are commonly better drained than the soils on the nearly level glacial lake plain and have a lower content of organic matter, which partially

results in a lower water-holding capacity and lower fertility levels.

#### Time

The length of time that the parent material has been exposed to soil-forming processes influences the nature of the soil that forms. These soil-forming processes have been active for only 9,000 to 12,000 years. Geologically, all of the soils in Roseau County are young. Because of the relatively short time of development, the soils in the area have a thinner profile than soils that have evolved over a longer period. The influence of parent material is more apparent in glaciated regions than in other areas where sufficient time has elapsed for the more complete development of the soils.

#### **Processes of Soil Formation**

Soil forms through complex processes that can be grouped into four general categories. These categories are additions, removals, transfers, and transformations.

The accumulation of organic matter in the A horizon of the mineral soils in Roseau County is an example of an addition. This accumulation is the main reason for the dark color of the A horizon. The color of the raw parent material remains uniform with increasing depth.

The leaching of lime from the upper 2 to 6 feet in many of the sandy soils in Roseau County is an example of a removal. The parent material of some soils, such as Marquette and Two Inlets soils, was limy, but the lime has been leached from the upper part of the profile by percolating water.

The translocation of clay from the A horizon to the B horizon in many soils is an example of a transfer. The A horizon or an E horizon is a zone of eluviation, or loss. The B horizon is a zone of illuviation, or gain. Baudette and Garnes soils are examples of soils in which the B horizon has more clay than the parent material and the A and E horizons have less clay. In the B horizon of some soils, thin clay films are in pores and on the faces of peds. This clay has been transferred from the A and E horizons.

An example of a transformation is the reduction and solubilization of ferrous iron. This process takes place under wet, saturated conditions in which there is no molecular oxygen. Gleying, or the reduction of iron, is evident in Cormant, Wabanica, and other soils, which have a dominantly gray subsoil. The gray color indicates the presence of reduced ferrous iron, which, in turn, implies wetness. Reduced iron is soluble, but it commonly has been moved short distances in the

soils in Roseau County, stopping either in the horizon where it originated or in an underlying horizon. Part of this iron can be reoxidized and segregated in the form of stains, concretions, or bright yellow and red concentrations.

#### Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (Soil Survey Staff, 1998 and 1999). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. Table 4 shows the classification of the soils in the survey area. The extent of the soils is shown in table 5.

The categories of soil classification are defined in the following paragraphs.

ORDER. Twelve soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol*. An example is Mollisol.

SUBORDER. Each order is divided into suborders primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Aquoll (*Aqu*, meaning water, plus *oll*, from Mollisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Endoaquolls (*Endo*, meaning within, plus *aquoll*, the suborder of the Mollisols that has an aquic moisture regime).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other known kind of soil. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective Typic identifies the subgroup that typifies the great group. An example is Typic Endoaquolls.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle-size class, mineralogy class, cation-exchange activity class, soil temperature regime, soil depth, and reaction class. A

family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is sandy, mixed, frigid Typic Endoaquolls.

SERIES. The series consists of soils that have similar horizons in their profile. The horizons are similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile. The texture of the surface layer or of the substratum can differ within a series.

Table 4.--Classification of the Soils

Soil name	Family or higher taxonomic class
Auganaugh	   Fine, smectitic, frigid Mollic Albaqualfs
-	·
	Coarse-silty over clayey, mixed over smectitic, superactive, frigid Typic Calciaquolls
	Fine-silty, mixed, superactive, frigid Aquic Hapludalfs
Bearden	Fine-silty, mixed, superactive, frigid Aeric Calciaquolls
Berner	Loamy, mixed, euic, frigid Terric Haplosaprists
Boash	Clayey over loamy, smectitic over mixed, superactive, calcareous, frigid Vertic Endoaquolls
Borup	Coarse-silty, mixed, superactive, frigid Typic Calciaquolls
_	Loamy, mixed, euic, frigid Terric Haplosaprists
	Loamy, mixed, euic, frigid Terric Haplosaprists
	Fine-loamy, mixed, superactive, frigid Typic Endoaqualfs
_	Mixed, frigid Aquic Udipsamments
	Fine-silty, mixed, superactive, frigid Typic Calciaquolls
	Mixed, frigid Typic Udipsamments
Cormant	Mixed, frigid Mollic Psammaquents
Croke	Coarse-silty over clayey, mixed over smectitic, superactive, frigid Aquic Hapludolls
Dalbo	Fine, smectitic, frigid Aquertic Hapludalfs
	Sandy, mixed, frigid Histic Humaquepts
	Clayey, smectitic, euic, frigid Terric Haplosaprists
	Loamy, mixed, superactive, frigid Aquic Arenic Hapludalfs
	Sandy over loamy, mixed, superactive, nonacid, frigid Aquic Udorthents
Epoufette	Coarse-loamy, mixed, superactive, frigid Mollic Endoaqualfs
Espelie	Sandy over clayey, mixed over smectitic, frigid Typic Epiaquolls
Faunce	Mixed, frigid Argic Udipsamments
Fluvaquents	Fluvaquents
<del>-</del>	
	Sandy-skeletal over loamy, mixed, superactive, frigid Oxyaquic Hapludolls
	Fine-loamy, mixed, superactive, frigid Aquic Hapludalfs
_	Coarse-silty, mixed, superactive, frigid Aeric Calciaquolls
	Fine, smectitic, frigid Typic Endoaquerts
Grimstad	Sandy over loamy, mixed, superactive, frigid Aeric Calciaquolls
Grygla	Sandy over loamy, mixed, superactive, nonacid, frigid Mollic Endoaquents
Hangaard	Sandy, mixed, frigid Typic Endoaquolls
Hapludalfs	Hapludalfs
-	Coarse-loamy, mixed, superactive, calcareous, frigid Histic Humaquepts
	Sandy over clayey, mixed over smectitic, frigid Aquic Hapludolls
	Mixed, frigid Aquic Udipsamments
	Sandy over clayey, mixed over smectitic, frigid Aquic Calciudolls
	Sandy, mixed, frigid Aeric Calciaquolls
Karlstad	Coarse-loamy, mixed, superactive, frigid Aquic Hapludalfs
Kratka	Sandy over loamy, mixed, superactive, frigid Typic Endoaquolls
Lallie	Fine, smectitic, calcareous, frigid Vertic Fluvaquents
	Sandy, mixed, frigid Histic Humaquepts
	Euic, frigid Typic Haplosaprists
-	Fine, smectitic, frigid Aquertic Hapludalfs
-	Sandy or sandy-skeletal, mixed, euic, frigid Terric Haplosaprists
_	Loamy-skeletal, mixed, superactive, frigid Inceptic Hapludalfs
	Sandy-skeletal over loamy, mixed, superactive, frigid Typic Calciaquolls
Meehan	Mixed, frigid Aquic Udipsamments
Mooselake	Euic, frigid Typic Haplohemists
	Fine-silty, mixed, superactive, frigid Oxyaquic Hapludalfs
	Fine, smectitic, frigid Typic Argiaquolls
	Coarse-loamy, mixed, superactive, frigid Aquic Argiudolls
	Sandy over loamy, mixed, superactive, nonacid, frigid Histic Humaquepts
	Loamy-skeletal, mixed, superactive, frigid Oxyaquic Argiudolls
-	Coarse-loamy, mixed, superactive, frigid Typic Calciaquolls
Redby	Mixed, frigid Aquic Udipsamments
Rifle	Euic, frigid Typic Haplohemists
	Fine-loamy, mixed, superactive, calcareous, frigid Typic Endoaquolls
	Sandy, mixed, frigid Typic Calciaquolls
	Mixed, frigid Aquic Udipsamments
_	Coarse-loamy, mixed, superactive, nonacid, frigid Histic Humaquepts
_	Fine-loamy over sandy or sandy-skeletal, mixed, superactive, frigid Mollic Endoaqualfs
Sax	Fine-silty, mixed, superactive, nonacid, frigid Histic Humaquepts
Seelyeville	Euic, frigid Typic Haplosaprists

Table 4.--Classification of the Soils--Continued

Soil name	Family or higher taxonomic class
Skagen	Coarse-loamy, mixed, superactive, frigid Aquic Calciudolls
Skime	Coarse-loamy, mixed, superactive, frigid Oxyaquic Hapludalfs
Spooner	Fine-silty, mixed, superactive, frigid Mollic Endoaqualfs
Strandquist	Sandy-skeletal over loamy, mixed, superactive, calcareous, frigid Typic Endoaquolls
Strathcona	Sandy over loamy, mixed, superactive, frigid Typic Calciaquolls
Syrene	Sandy, mixed, frigid Typic Calciaquolls
Tacoosh	Loamy, mixed, euic, frigid Terric Haplohemists
Tawas	Sandy or sandy-skeletal, mixed, euic, frigid Terric Haplosaprists
Thiefriver	Sandy over clayey, mixed over smectitic, frigid Typic Calciaquolls
Two Inlets	Mixed, frigid Psammentic Hapludalfs
Udipsamments	Udipsamments
Ulen	Sandy, mixed, frigid Aeric Calciaquolls
Wabanica	Fine-silty, mixed, superactive, calcareous, frigid Typic Endoaquolls
Warroad	Sandy over loamy, mixed, superactive, frigid Typic Epiaquolls
Wheatville	Coarse-silty over clayey, mixed over smectitic, superactive, frigid Aeric Calciaquolls
Wildwood	Very fine, smectitic, nonacid, frigid Histic Humaquepts
Woodslake	Very fine, smectitic, frigid Vertic Epiaquolls
Wurtsmith	Mixed, frigid Oxyaquic Udipsamments
Zimmerman	Mixed, frigid Argic Udipsamments
Zippel	Coarse-silty, mixed, superactive, calcareous, frigid Typic Endoaquolls

Table 5.--Acreage and Proportionate Extent of the Soils

(The abbreviation "MAP" stands for "mean annual precipitation." The numbers that follow the abbreviation refer to a range in inches.)

Map symbol	Soil name	Acres	Percent
	<u> </u>		<u> </u>
47	Colvin silty clay loam, 0 to 2 percent slopes	7,805	0.7
18B	Hiwood fine sand, 1 to 6 percent slopes	22,218	2.1
52	Augsburg loam, 0 to 2 percent slopes	24,013	2.2
59	Grimstad fine sandy loam, 0 to 3 percent slopes	2,311	0.2
54	Ulen fine sandy loam, 0 to 3 percent slopes	2,115	0.2
55	Foxhome sandy loam, 0 to 3 percent slopes	3,595	0.3
57	Bearden silt loam, 0 to 2 percent slopes	1,273	0.1
17	Garnes fine sandy loam, 0 to 3 percent slopes	8,598	0.8
L11	Hangaard sandy loam, 0 to 2 percent slopes	1,690	0.2
116	Redby loamy fine sand, 0 to 3 percent slopes	24,721	2.3
L17	Cormant loamy fine sand, 0 to 2 percent slopes	16,309	1.5
L33	Dalbo loam, 0 to 3 percent slopes	3,551	0.3
145	Enstrom loamy fine sand, 0 to 3 percent slopes	12,752	1.2
147	Spooner very fine sandy loam, 0 to 2 percent slopes	1,699	0.2
158B	Zimmerman fine sand, 1 to 6 percent slopes   Baudette fine sandy loam, 1 to 6 percent slopes	3,807	0.4
167B 187	Haug muck, 0 to 1 percent slopes	4,028 15,209	0.4
191	Epoufette loamy fine sand, MAP 22-30, 0 to 2 percent slopes	536	1.4
202	Meehan loamy sand, MAP 22-30, 0 to 2 percent slopes	3,340	0.3
202	Karlstad loamy sand, 0 to 3 percent slopes	6,984	0.7
242B	Marquette loamy sand, 1 to 8 percent slopes	2,371	0.7
280	Pelan sandy loam, 0 to 3 percent slopes	1,340	0.1
379	Percy loam, 0 to 2 percent slopes, very cobbly	203,283	18.9
383	Percy loam, 0 to 2 percent slopes	18,456	1.7
384	Percy mucky loam, depressional, 0 to 1 percent slopes	19,302	1.8
387	Roliss loam, depressional, 0 to 1 percent slopes	532	*
104	Chilgren fine sandy loam, 0 to 2 percent slopes	3,591	0.3
112	Mavie fine sandy loam, 0 to 2 percent slopes	6,221	0.6
432	Strandquist loam, 0 to 2 percent slopes	7,435	0.7
433	Syrene mucky sandy loam, depressional, 0 to 1 percent slopes	1,623	0.2
435	Syrene sandy loam, 0 to 2 percent slopes	2,392	0.2
439	Strathcona fine sandy loam, 0 to 2 percent slopes	11,800	1.1
481	Kratka fine sandy loam, 0 to 2 percent slopes	16,363	1.5
482	Grygla loamy fine sand, 0 to 2 percent slopes	12,424	1.2
532	Sago muck, 0 to 1 percent slopes	2,449	0.2
534	Mooselake mucky peat, 0 to 1 percent slopes	8,330	0.8
540	Seelyeville muck, 0 to 1 percent slopes	24,825	2.3
541	Rifle mucky peat, MAP 18-22, 0 to 1 percent slopes	13,853	1.3
543	Markey muck, MAP 18-22, 0 to 1 percent slopes	21,091	2.0
544	Cathro muck, MAP 18-22, 0 to 1 percent slopes	24,489	2.3
546	Lupton muck, MAP 22-30, 0 to 1 percent slopes	15,643	1.5
547	Deerwood muck, 0 to 1 percent slopes	13,419	1.2
550	Dora muck, 0 to 1 percent slopes	11,389	1.1
561	Bullwinkle muck, 0 to 1 percent slopes	9,461	0.9
63	Northwood muck, 0 to 1 percent slopes   Eckvoll loamy fine sand, 0 to 3 percent slopes	13,285	1.2
565 568	Zippel very fine sandy loam, 0 to 2 percent slopes	6,811 12,033	0.6
569	Wabanica silt loam, 0 to 2 percent slopes	24,307	1.1
570	Faunce loamy fine sand, 0 to 3 percent slopes	736	2.3
81	Percy fine sandy loam, 0 to 1 percent slopes	22	*
82	Roliss loam, 0 to 2 percent slopes	10,220	1.0
583	Nereson fine sandy loam, 0 to 3 percent slopes	781	*
527	Tawas muck, MAP 22-30, 0 to 1 percent slopes	8,577	0.8
30	Wildwood muck, 0 to 1 percent slopes	10,552	1.0
543	Huot fine sandy loam, 0 to 3 percent slopes	1,227	0.1
644	Boash clay loam, 0 to 2 percent slopes	35,319	3.3
645	Espelie fine sandy loam, 0 to 2 percent slopes	9,168	0.9

See footnote at end of table.

Table 5.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Acres	Percent
			<u> </u> 
651	Thiefriver fine sandy loam, 0 to 2 percent slopes	2,156	0.2
708	Rushlake loamy sand, 0 to 3 percent slopes	3,727	0.3
712	Rosewood fine sandy loam, 0 to 2 percent slopes	10,938	1.0
721B	Corliss loamy sand, 1 to 6 percent slopes	3,483	0.3
733 737	Berner muck, 0 to 1 percent slopes	2,101	0.2
755	Mahkonce fine sandy loam, 0 to 3 percent slopes    Woodslake clay, 0 to 1 percent slopes	7,692 5,004	0.7
767	Auganaush loam, 0 to 2 percent slopes	5,711	0.5
794	Clearriver loamy fine sand, 0 to 3 percent slopes	4,727	0.4
1002	Fluvaquents, 0 to 2 percent slopes, frequently flooded	4,621	0.4
1030	Pits, gravel-Udipsamments complex, 1 to 50 percent slopes	1,834	0.2
1031	Seelyeville muck, ponded, 0 to 1 percent slopes	8,166	0.8
1067	Fluvaquents, frequently flooded-Hapludalfs complex, 0 to 60 percent		İ
	slopes	11,743	1.1
1133B	Skime loamy fine sand, 0 to 4 percent slopes	6,020	0.6
1134	Borup-Glyndon complex, 0 to 2 percent slopes	10,970	1.0
1144	Strathcona and Kratka soils, depressional, 0 to 1 percent slopes	4,566	0.4
1154	Sax muck, 0 to 1 percent slopes	2,777	0.3
1158	Skagen loam, 0 to 3 percent slopes	3,566	0.3
1170 1179B	Skagen loam, 0 to 3 percent slopes, very cobbly    Moranville loamy fine sand, 0 to 4 percent slopes	17,853	1.7
11/9B 1181	Rosewood-Ulen complex, 0 to 2 percent slopes	6,846 2,477	0.6
1182	Warroad fine sandy loam, 0 to 2 percent slopes	11,652	1.1
1187	Dora muck, ponded, 0 to 1 percent slopes	10,445	1.0
1191	Sahkahtay sandy loam, 0 to 2 percent slopes	1,419	0.1
1206	Cormant-Redby complex, 0 to 2 percent slopes	14,925	1.4
1214	Mustinka clay loam, 0 to 1 percent slopes	10,828	1.0
1274B	Redby-Hiwood-Leafriver complex, 0 to 6 percent slopes	16,066	1.5
1298	Borup silt loam, 0 to 2 percent slopes	13,088	1.2
1302	Foldahl fine sandy loam, 0 to 3 percent slopes	4,732	0.4
1304	Glyndon very fine sandy loam, 0 to 2 percent slopes	4,160	0.4
1305	Hilaire fine sandy loam, 0 to 3 percent slopes	4,705	0.4
1314	Tacoosh mucky peat, MAP 22-30, 0 to 1 percent slopes	4,184	0.4
1316	Wheatville loam, 0 to 2 percent slopes	1,169	0.1
1326	Augsburg and Wabanica soils, depressional, 0 to 1 percent slopes	2,705	0.3
1327B 1328	Karlstad-Marquette complex, 0 to 8 percent slopes    Northwood muck, wooded, 0 to 1 percent slopes	3,645 3,153	0.3
1333	Dora muck, wooded, 0 to 1 percent slopes	2,683	0.3
1356	Water, miscellaneous	243	*
1399B	Two Inlets loamy sand, noncalcareous substratum, 0 to 6 percent slopes	4,392	0.4
1401	Grygla mucky loamy fine sand, depressional, 0 to 1 percent slopes	2,621	0.2
1402	Leafriver muck, wooded, 0 to 1 percent slopes	5,671	0.5
1404	Berner muck, wooded, 0 to 1 percent slopes	2,440	0.2
1405	Lallie mucky silt loam, MAP 18-22, 0 to 1 percent slopes	6,167	0.6
1414	Nereson fine sandy loam, 0 to 3 percent slopes, very cobbly	7,034	0.7
1428	Karlsruhe sandy loam, MAP 18-22, 0 to 3 percent slopes	562	*
1444	Wurtsmith loamy sand, MAP 22-30, 0 to 3 percent slopes	4,360	0.4
1448	Grano clay, MAP 18-22, 0 to 2 percent slopes	11,095	1.0
1449	Grano loam, MAP 18-22, 0 to 2 percent slopes	6,707	0.6
1807	Cathro muck, ponded, MAP 22-30, 0 to 1 percent slopes	11,737	1.1
1808 1918	Markey muck, ponded, MAP 22-30, 0 to 1 percent slopes	4,474	0.4
1918 1923B	Garnes loam, 1 to 4 percent slopes, very stony	3,268 4,132	0.3
1984	Leafriver muck, 0 to 1 percent slopes.	7,267	0.7
W	Water	3,519	0.3
		1,073,900	100.0

<sup>\*</sup> Less than 0.1 percent.

## Soil Series and Detailed Soil Map Units

In this section, arranged in alphabetical order, each soil series recognized in the survey area is described. Each series description is followed by detailed descriptions of the associated soil map units.

Characteristics of the soil and the material in which it formed are identified for each soil series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the "Soil Survey Manual" (Soil Survey Division Staff, 1993). Many of the technical terms used in the descriptions are defined in "Keys to Soil Taxonomy" (Soil Survey Staff, 1998). Unless otherwise stated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series.

The map units on the soil maps in this survey represent the soils or miscellaneous areas in the survey area. These soils or miscellaneous areas are listed as individual components in the map unit description. The map unit descriptions in this section, along with the maps, can be used to determine the suitability and potential of a unit for specific uses. They also can be used to plan the management needed for those uses. More information about each map unit is given in other sections of this survey.

A map unit delineation on the detailed soil maps represents an area on the landscape. It is identified by differences in the properties and taxonomic classification of components and by the percentage of each component in the map unit.

Components that are dissimilar, or contrasting, are identified in the map unit description. Dissimilar components are those that have properties and behavioral characteristics divergent enough from those of the major components to affect use or to require different management. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps.

Components that are similar to the major

components (noncontrasting) are not identified in the map unit description. Similar components are those that have properties and behavioral characteristics similar enough to those of the major components that they do not affect use or require different management.

The presence of multiple components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into segments that have similar use and management requirements. The delineation of such landscape segments on the map provides sufficient information for the development of resource plans, but if intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol is used for each map unit on the detailed soil maps. This symbol precedes the map unit name in the map unit descriptions. Each description includes general information about the unit. The map unit descriptions include representative values in feet and the months in which wet soil moisture status is highest and lowest in the soil profile and ponding is shallowest and deepest on the soil surface. The descriptions also include the classes and months in which flooding is least and most likely to occur. Tables 26, 27, and 28 provide a complete display of this data for every month of the year. The available water capacity given in each map unit description is calculated for all horizons in the soil profile. The organic matter content displayed in each map unit description is calculated for all horizons in the soil profile, except those that represent the surface duff layer on forested soils. Table 24 provides a complete display of available water capacity and organic matter content by horizon.

The principal hazards and limitations to be considered in planning for specific uses are described in other sections of this survey.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the

surface layer or of the underlying layers, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer or of the underlying layers. They also can differ in slope, stoniness, salinity, wetness, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into soil phases. The name of a soil phase commonly indicates a feature that affects use or management. For example, Marquette loamy sand, 1 to 8 percent slopes, is a phase of the Marquette series.

A map unit is named for the component or components that make up a dominant percentage of the map unit. Many map units consist of one dominant component. These map units are consociations. Deerwood muck, 0 to 1 percent slopes, is an example.

Some map units are made up of two or more dominant components. These map units are complexes or undifferentiated groups.

A complex consists of two or more components in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The components of a complex cannot be mapped separately at a scale of about 1:24,000. Attempting to delineate the individual components of a complex would result in excessive clutter that could make the map illegible. The pattern and proportion of the components in a complex are somewhat similar in all areas. Borup-Glyndon complex, 0 to 2 percent slopes, is an example.

An undifferentiated group is made up of two or more components that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the components in a mapped area are not uniform. An area can be made up of only one of the dominant components, or it can be made up of all of them. Augsburg and Wabanica soils, depressional, 0 to 1 percent slopes, is an undifferentiated group in this survey area.

This survey includes miscellaneous areas. Such areas have little or no soil material and support little or no vegetation. The Pits component in the map unit Pits, gravel-Udipsamments complex is an example.

The abbreviation "MAP" in a map unit name stands for "mean annual precipitation." The numbers that follow the abbreviation refer to a range in inches.

Table 5 gives the acreage and proportionate extent of each map unit. Other tables (see Contents) give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines

many of the terms used in describing the soils or miscellaneous areas.

#### Auganaush Series

Drainage class: Poorly drained Permeability: Moderately slow or slow

Landform: Lake plains

Parent material: Glaciolacustrine deposits and till

Slope range: 0 to 2 percent

Taxonomic classification: Fine, smectitic, frigid Mollic

Albaqualfs

Taxadjunct features: The Auganaush soils in this survey area have a thicker surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soils.

#### Typical Pedon

Auganaush loam, 0 to 2 percent slopes, 250 feet north and 200 feet east of the southwest corner of sec. 31, T. 162 N., R. 38 W.

- A—0 to 5 inches; black (10YR 2/1) loam, dark gray (10YR 4/1) dry; weak very fine and fine granular structure; very firm; many very fine and fine roots; 2 percent gravel; neutral; clear smooth boundary.
- E—5 to 7 inches; grayish brown (2.5Y 5/2) very fine sandy loam; few fine prominent dark yellowish brown (10YR 4/6) iron concentrations and common medium faint dark grayish brown (2.5Y 4/2) iron depletions; moderate thin and medium platy structure; very firm; few medium and coarse roots and common very fine and fine roots; 2 percent gravel; slightly acid; clear smooth boundary.
- Btg—7 to 18 inches; dark gray (5Y 4/1) clay; common fine prominent dark yellowish brown (10YR 4/6) iron concentrations; moderate medium subangular blocky structure parting to moderate very fine and fine subangular blocky; firm; few very fine to coarse roots; many thick very dark gray (5Y 3/1) clay films on faces of peds; 2 percent gravel; neutral; clear wavy boundary.
- Bkg1—18 to 23 inches; grayish brown (2.5Y 5/2) silty clay loam that has bands of olive gray (5Y 4/2) clay 1/4 to 1/2 inch thick; common fine distinct light olive brown (2.5Y 5/4) iron concentrations and many medium faint dark grayish brown (2.5Y 4/2) iron depletions; weak medium subangular blocky structure; firm; few very fine and fine roots; few medium and fine irregular light gray (2.5Y 7/2) soft masses of lime in ped interiors; slightly

effervescent; 2 percent gravel and 2 percent cobbles; moderately alkaline; clear wavy boundary.

Bkg2—23 to 58 inches; light brownish gray (2.5Y 6/2) silty clay loam that has bands of olive gray (5Y 4/2) clay <sup>1</sup>/<sub>4</sub> to <sup>3</sup>/<sub>4</sub> inch thick; common medium faint light olive brown (2.5Y 5/3) iron concentrations, common medium faint dark grayish brown (2.5Y 4/2) iron depletions, and few fine prominent very pale brown (10YR 7/3) iron concentrations; weak coarse subangular blocky structure; firm; common medium irregular white (2.5Y 8/1) soft masses of lime; strongly effervescent; 5 percent gravel and 3 percent cobbles; moderately alkaline; gradual wavy boundary.

Cg—58 to 80 inches; light brownish gray (2.5Y 6/2) loam; common medium faint grayish brown (2.5Y 5/2) iron depletions and common medium faint light yellowish brown (2.5Y 6/3) iron concentrations; massive; firm; common medium irregular white (2.5Y 8/1) soft masses of lime on faces of peds and in pores; strongly effervescent; 5 percent gravel and 5 percent cobbles; moderately alkaline.

#### Range in Characteristics

Depth to carbonates: 17 to 34 inches

A horizon:

Hue-10YR, 2.5Y, or N

Value—2 or 3

Chroma—0 or 1

Texture—loam

Content of rock fragments—0 to 2 percent

E horizon:

Hue-10YR or 2.5Y

Value—4 or 5

Chroma—1 or 2

Texture—fine sandy loam, very fine sandy loam, or loam

Content of rock fragments—0 to 2 percent

Btg horizon:

Hue-2.5Y or 5Y

Value—4

Chroma—1 or 2

Texture—clay

Content of rock fragments—0 to 2 percent

Bkg horizon:

Hue—2.5Y or 5Y

Value—5 or 6

Chroma—1 or 2

Texture—silty clay loam

Content of rock fragments—1 to 10 percent

Cg horizon:

Hue-2.5Y or 5Y

Value—5 or 6

Chroma—1 or 2

Texture—loam, clay loam, or silty clay loam Content of rock fragments—1 to 10 percent

## 767—Auganaush loam, 0 to 2 percent slopes

#### Component Descriptionss

#### Auganaush and similar soils

Extent: 90 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): At

the surface (April)

Wet soil moisture status is lowest (depth, months): 3.3

feet (August)

Ponding does not occur (months): January, February,

March, December

Ponding is deepest (depth, months): 0.3 foot (April,

May, June, November)

Available water capacity to a depth of 60 inches: 10.3

inches

Content of organic matter in the upper 10 inches: 3.3

percent

#### Mustinka and similar soils

Extent: 5 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Clay loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): At

the surface (April)

Wet soil moisture status is lowest (depth, months): 3.0

feet (August)

Ponding does not occur (months): January, February,

March, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, November)

Available water capacity to a depth of 60 inches: 10.3 inches

Content of organic matter in the upper 10 inches: 7.1 percent

#### Wildwood and similar soils

Extent: 3 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 5.7 inches

Content of organic matter in the upper 10 inches: 62.0 percent

#### Mahkonce and similar soils

Extent: 2 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained

Parent material: Till Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 9.7 inches

Content of organic matter in the upper 10 inches: 2.0 percent

#### Management

Major uses: Forest land, pasture, and cropland

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Forest Land" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

#### Augsburg Series

Drainage class: Poorly drained and very poorly drained

Permeability: Upper part—moderately rapid; lower

part—slow or very slow Landform: Lake plains

Parent material: Glaciolacustrine deposits

Slope range: 0 to 2 percent

Taxonomic classification: Coarse-silty over clayey, mixed over smectitic, superactive, frigid Typic Calciaquolls

#### Typical Pedon

Augsburg loam, 0 to 2 percent slopes, 1,450 feet south and 300 feet west of the northeast corner of sec. 31, T. 162 N., R. 39 W.

Ap—0 to 9 inches; black (N 2/0) loam, black (N 2/0) dry; weak fine subangular blocky structure; friable; common very fine roots; slightly effervescent; slightly alkaline; abrupt smooth boundary.

Bkg—9 to 16 inches; grayish brown (2.5Y 5/2) silt loam; few fine distinct light olive brown (2.5Y 5/4) iron concentrations; weak fine subangular blocky structure; very friable; few very fine roots; strongly effervescent; moderately alkaline; clear wavy boundary.

Bg1—16 to 24 inches; light brownish gray (2.5Y 6/2) silt loam; many fine distinct light olive brown (2.5Y 5/6) iron concentrations; weak fine subangular blocky structure; very friable; few very fine roots; strongly effervescent; moderately alkaline; gradual wavy boundary.

Bg2—24 to 33 inches; light brownish gray (2.5Y 6/2) silt loam; common fine distinct light olive brown (2.5Y 5/6) iron concentrations; weak fine subangular blocky structure; very friable; strongly effervescent; moderately alkaline; abrupt wavy boundary.

2Cg—33 to 80 inches; very dark grayish brown (2.5Y 3/2) clay that is stratified with bands of light brownish gray (2.5Y 6/2) silt loam 1/16 to 1/8 inch thick; common fine prominent dark yellowish brown (10YR 4/6) iron concentrations; weak thin

platy soil fragments; firm; slightly effervescent on bottom of plates; slightly alkaline.

#### Range in Characteristics

Thickness of the mollic epipedon: 8 to 13 inches

#### Ap horizon:

Hue-10YR or N Value-2 or 3 Chroma—0 or 1

Texture—loam or mucky very fine sandy loam

#### Bka horizon:

Hue-10YR or 2.5YR

Value—4 to 6 Chroma—1 or 2

Texture—loam, very fine sandy loam, loamy very fine sand, or silt loam

#### Bg horizon:

Hue-2.5YR

Value-5 or 6

Chroma—2

Texture—loam, very fine sandy loam, loamy very fine sand, or silt loam

#### 2Cg horizon:

Hue-2.5Y or 5Y Value—3 to 6

Chroma—1 or 2

Texture—clay or clay stratified with silt loam, very fine sandy loam, or very fine sand

#### 52—Augsburg loam, 0 to 2 percent slopes

#### Component Descriptionss

#### Augsburg and similar soils

Extent: 85 percent of the unit

Geomorphic description: Flats on lake plains; swales

on lake plains

Slope range: 0 to 2 percent Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8

feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 10.5 inches

Content of organic matter in the upper 10 inches: 4.8 percent

#### Croke and similar soils

Extent: 5 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Very fine sandy loam Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April, May)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 9.5

Content of organic matter in the upper 10 inches: 5.0 percent

#### Grano and similar soils

Extent: 5 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 2 percent Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (April)

Wet soil moisture status is lowest (depth, months): 3.0 feet (August)

Ponding does not occur (months): January, February, March, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, November)

Available water capacity to a depth of 60 inches: 9.7 inches

Content of organic matter in the upper 10 inches: 3.5 percent

#### Sago and similar soils

Extent: 5 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 13.4 inches

Content of organic matter in the upper 10 inches: 72.5 percent

#### Management

Major use: Cropland

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

## 1326—Augsburg and Wabanica soils, depressional, 0 to 1 percent slopes

#### Component Descriptions

#### Augsburg, depressional, and similar soils

Extent: 0 to 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Mucky very fine sandy

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 3.0 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September, October)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, November, December)

Available water capacity to a depth of 60 inches: 10.1 inches

Content of organic matter in the upper 10 inches: 6.1 percent

#### Wabanica, depressional, and similar soils

Extent: 0 to 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Mucky silt loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained Parent material: Glaciolacustrine deposits Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 1.6 feet (February, August)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September, October)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, November, December)

Available water capacity to a depth of 60 inches: 11.7 inches

Content of organic matter in the upper 10 inches: 8.7 percent

#### Sax and similar soils

Extent: 6 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 14.5 inches

Content of organic matter in the upper 10 inches: 47.5 percent

### Espelie and similar soils

Extent: 2 percent of the unit

Geomorphic description: Flats on lake plains; swales

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June)

Available water capacity to a depth of 60 inches: 7.7 inches

Content of organic matter in the upper 10 inches: 3.0 percent

### Zippel and similar soils

Extent: 2 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Very fine sandy loam Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May. June)

Available water capacity to a depth of 60 inches: 10.9 inches

Content of organic matter in the upper 10 inches: 4.0 percent

# Management

Major use: Pasture

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

## **Baudette Series**

Drainage class: Moderately well drained

Permeability: Moderate Landform: Lake plains

Parent material: Glaciolacustrine deposits

Slope range: 1 to 6 percent

Taxonomic classification: Fine-silty, mixed, superactive, frigid Aquic Hapludalfs

# Typical Pedon

Baudette fine sandy loam (fig. 2), 1,700 feet south and 1,100 feet west of the northeast corner of sec. 24, T. 162 N., R. 35 W.

- Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) fine sandy loam, light brownish gray (10YR 6/2) dry; weak fine subangular blocky structure; friable; neutral; abrupt smooth boundary.
- E—8 to 10 inches; light brownish gray (10YR 6/2) very fine sandy loam; weak thin platy structure; friable; neutral; clear wavy boundary.
- Bt1—10 to 13 inches; brown (10YR 4/3) silty clay loam; moderate fine subangular blocky structure; friable; few distinct discontinuous dark grayish brown (10YR 4/2) clay films on faces of peds and many distinct discontinuous light gray (10YR 7/2) silt coats on faces of peds; neutral; clear wavy boundary.
- Bt2—13 to 19 inches; brown (10YR 4/3) silty clay loam; moderate medium prismatic structure parting to moderate fine subangular blocky; friable; common distinct discontinuous dark grayish brown (10YR 4/2) clay films on faces of peds; neutral; clear wavy boundary.
- Bt3—19 to 30 inches; light olive brown (2.5Y 5/3) silty clay loam; few fine distinct light olive brown (2.5Y 5/6) iron concentrations and few fine faint grayish brown (2.5Y 5/2) iron depletions; weak medium prismatic structure parting to moderate fine and medium subangular blocky; friable; common distinct discontinuous olive brown (2.5Y 4/3) clay

films on faces of peds; neutral; clear wavy boundary.

BCk1—30 to 44 inches; light olive brown (2.5Y 5/4) silt loam; common fine and medium distinct grayish brown (2.5Y 5/2) iron depletions, few fine distinct light olive brown (2.5Y 5/6) iron concentrations, and few very fine prominent black (5YR 2.5/1) iron and manganese depletions; weak medium platy soil fragments; friable; many fine and medium prominent white (10YR 8/1) threads and soft masses of lime between peds; violently effervescent; slightly alkaline; gradual wavy boundary.

BCk2—44 to 65 inches; light olive brown (2.5Y 5/4) silt loam; common medium distinct grayish brown (2.5Y 5/2) iron depletions, common fine distinct light olive brown (2.5Y 5/6) iron concentrations, and few very fine prominent black (5YR 2.5/1) iron and manganese depletions; weak medium platy soil fragments; friable; common fine and medium prominent white (10YR 8/1) threads and soft masses of lime between peds; strongly effervescent; moderately alkaline; gradual wavy boundary.

C—65 to 80 inches; light olive brown (2.5Y 5/4) silt loam; many medium distinct grayish brown (2.5Y 5/2) iron depletions, common fine distinct light olive brown (2.5Y 5/6) iron concentrations, and few very fine prominent black (5YR 2.5/1) iron and manganese depletions; massive; friable; few fine prominent white (10YR 8/1) threads and soft masses of lime between peds; strongly effervescent; moderately alkaline.

## Range in Characteristics

Depth to carbonates: 15 to 35 inches

Ap horizon:

Hue—10YR

Value—3

Chroma—1 or 2

Texture—fine sandy loam

E horizon:

Hue—10YR

Value—5 or 6

Chroma-2 or 3

Texture—fine sandy loam or very fine sandy loam

Bt horizon:

Hue—10YR or 2.5Y

Value—3 to 5

Chroma-2 or 3

Texture—silt loam, silty clay loam, or clay loam

BCk horizon:

Hue-2.5Y

Value—5 or 6

Chroma—3 or 4

Texture—silt loam

C horizon:

Hue-2.5Y

Value—5 or 6

Chroma-2 to 4

Texture—very fine sandy loam or silt loam

# 167B—Baudette fine sandy loam, 1 to 6 percent slopes

# Component Descriptions

#### Baudette and similar soils

Extent: 85 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 1 to 6 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7

feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 11.9

inches

Content of organic matter in the upper 10 inches: 2.1

percent

#### Spooner and similar soils

Extent: 10 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Very fine sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Floodina: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8

feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 11.8 inches

Content of organic matter in the upper 10 inches: 2.1 percent

#### Moranville and similar soils

Extent: 5 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 4 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 7.7 inches

Content of organic matter in the upper 10 inches: 1.1 percent

## Management

Major uses: Cropland, pasture, and forest land

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Forest Land" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

#### Bearden Series

Drainage class: Moderately well drained

Permeability: Slow to moderate

Landform: Lake plains

Parent material: Glaciolacustrine deposits

Slope range: 0 to 2 percent

Taxonomic classification: Fine-silty, mixed, superactive, frigid Aeric Calciaquolls

## Typical Pedon

Bearden silt loam, 0 to 2 percent slopes, 2,350 feet

south and 900 feet west of the northeast corner of sec. 34, T. 163 N., R. 40 W.

- Ap—0 to 7 inches; black (N 2/0) silt loam, very dark gray (N 3/0) dry; weak medium subangular blocky structure parting to weak fine subangular blocky; friable; few very fine roots; slightly effervescent; slightly alkaline; clear wavy boundary.
- ABk—7 to 15 inches; black (10YR 2/1) silt loam, very dark gray (10YR 3/1) dry; common fine prominent grayish brown (2.5Y 5/2) material from the Bk1 horizon; weak medium subangular blocky structure parting to weak fine subangular blocky; friable; disseminated lime throughout; few very fine roots; strongly effervescent; moderately alkaline; clear wavy boundary.
- Bk1—15 to 21 inches; grayish brown (2.5Y 5/2) silt loam; common fine prominent very dark gray (10YR 3/1) ABk material between peds; weak medium subangular blocky structure parting to weak fine subangular blocky; friable; few very fine roots; strongly effervescent; moderately alkaline; clear wavy boundary.
- Bk2—21 to 32 inches; grayish brown (2.5Y 5/2) silt loam; weak fine subangular blocky structure; friable; disseminated lime throughout; few very fine roots; strongly effervescent; moderately alkaline; clear wavy boundary.
- C1—32 to 41 inches; grayish brown (2.5Y 5/2) silt loam; many fine prominent dark yellowish brown (10YR 4/6) iron concentrations; weak fine subangular blocky soil fragments; friable; slightly effervescent; moderately alkaline; gradual wavy boundary.
- C2—41 to 57 inches; grayish brown (2.5Y 5/2) and dark grayish brown (2.5Y 4/2), stratified silt loam and silty clay loam; many medium prominent dark yellowish brown (10YR 4/6) and common fine distinct olive brown (2.5Y 4/4) iron concentrations; moderate thin platy soil fragments parting to weak fine subangular blocky; friable; slightly effervescent; moderately alkaline; gradual wavy boundary.
- C3—57 to 68 inches; light brownish gray (2.5Y 6/2) and grayish brown (2.5Y 5/2), stratified silt loam and silty clay loam; common medium prominent dark yellowish brown (10YR 4/6) iron concentrations; moderate thin platy soil fragments parting to weak fine subangular blocky; friable; slightly effervescent; moderately alkaline; gradual wavy boundary.
- C4—68 to 80 inches; light brownish gray (2.5Y 6/2) and grayish brown (2.5Y 5/2), stratified silty clay loam and silty clay; few medium prominent dark

yellowish brown (10YR 4/6) iron concentrations; moderate thin platy soil fragments parting to weak fine subangular blocky; friable; slightly effervescent; slightly alkaline.

## Range in Characteristics

Thickness of the mollic epipedon: 7 to 16 inches

Ap horizon:

Hue-10YR or N

Value—2

Chroma—0 or 1

Texture—silt loam

ABk horizon:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—silt loam or silty clay loam

Bk horizon:

Hue-10YR, 2.5Y, or 5Y

Value—4 to 6

Chroma—1 to 4

Texture—silt loam or silty clay loam

C horizon:

Hue-2.5Y or 5Y

Value—4 to 6

Chroma—2

Texture—silt loam or silty clay loam

# 67—Bearden silt loam, 0 to 2 percent slopes

## Component Descriptions

## Bearden and similar soils

Extent: 85 percent of the unit

Geomorphic description: Rises on lake plains; flats on

lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Silt loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

2.0 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7

feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 11.6 inches

Content of organic matter in the upper 10 inches: 4.3 percent

#### Colvin and similar soils

Extent: 15 percent of the unit

Geomorphic description: Flats on lake plains; swales

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Silty clay loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8

feet (August)

Ponding does not occur (months): January, February,

March, August, December

Ponding is deepest (depth, months): 0.3 foot (April,

May, June, July, September, October, November) Available water capacity to a depth of 60 inches: 11.1

inches

Content of organic matter in the upper 10 inches: 5.5

percent

## Management

Major use: Cropland

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- · "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

## Berner Series

Drainage class: Very poorly drained

Permeability: Upper part—moderate; middle part—rapid; lower part—moderately slow or moderate

Landform: Lake plains

Parent material: Organic materials over glaciolacustrine deposits or till

Slope range: 0 to 1 percent

Taxonomic classification: Loamy, mixed, euic Terric

Haplosaprists

#### Typical Pedon

Berner muck, wooded, 0 to 1 percent slopes, 1,000 feet north and 2,050 feet west of the southeast corner of sec. 19, T. 162 N., R. 44 W.

- Oa1—0 to 18 inches; muck, very dark grayish brown (10YR 3/2) broken face, black (10YR 2/1) rubbed; about 10 percent fiber, 5 percent rubbed; weak fine subangular blocky structure parting to weak very fine subangular blocky; very friable; many very fine and fine and common medium roots; neutral; clear wavy boundary.
- Oa2—18 to 23 inches; muck, black (10YR 2/1) broken face and rubbed; about 5 percent fiber, 2 percent rubbed; weak fine subangular blocky structure parting to weak very fine subangular blocky; very friable; many very fine and fine roots; neutral; clear wavy boundary.
- A—23 to 28 inches; very dark gray (10YR 3/1) loamy fine sand; weak fine subangular blocky structure; very friable; common very fine and fine roots; neutral; clear wavy boundary.
- Cg1—28 to 41 inches; light olive gray (5Y 6/2) fine sand; common fine distinct olive (5Y 5/6) and olive yellow (5Y 6/6) iron concentrations; single grain; loose; slightly alkaline; clear wavy boundary.
- 2Cg2—41 to 80 inches; light olive gray (5Y 6/2) loam; common fine and medium prominent light olive brown (2.5Y 5/6) and olive yellow (2.5Y 6/6) iron concentrations; massive; friable; strongly effervescent; 8 percent gravel; slightly alkaline.

# Range in Characteristics

Thickness of the organic material: 16 to 30 inches Other features: Some pedons have a Bg horizon.

#### Oa horizon:

Hue—10YR or 7.5YR

Value—2 or 3

Chroma—1 or 2

Texture—muck

Content of wood fragments—0 to 15 percent

#### A horizon:

Hue-2.5Y, 10YR, or N

Value—2 to 4

Chroma—0 to 2

Texture—fine sandy loam or loamy fine sand Content of rock fragments—0 to 2 percent

#### Cg horizon:

Hue-2.5Y or 5Y

Value—4 to 6

Chroma—2

Texture—sand, fine sand, or loamy fine sand Content of rock fragments—0 to 5 percent

#### 2Cg horizon:

Hue-2.5Y or 5Y

Value—4 to 6

Chroma—2

Texture—fine sandy loam, loam, or silt loam Content of rock fragments—2 to 10 percent

## 733—Berner muck, 0 to 1 percent slopes

## **Component Descriptions**

#### Berner and similar soils

Extent: 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits or till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May, June)

Wet soil moisture status is lowest (depth, months): 2.1 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (January, February, July, August, September, October, November, December)

Ponding is deepest (depth, months): 0.5 foot (March, April, May, June)

Available water capacity to a depth of 60 inches: 14.4 inches

Content of organic matter in the upper 10 inches: 87.5 percent

#### Grygla and similar soils

Extent: 5 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits and till

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.1 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 8.7 inches

Content of organic matter in the upper 10 inches: 1.8 percent

## Seelyeville and similar soils

Extent: 5 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

Drainage class: Very poorly drained Parent material: Organic materials

Flooding: None

Wet soil moisture status is highest (depth, months): At

the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 1.6

feet (February, August)

Ponding is shallowest (depth, months): 0.3 foot (January, February, July, August, September, October, November, December)

Ponding is deepest (depth, months): 0.5 foot (March, April, May, June)

Available water capacity to a depth of 60 inches: 23.9 inches

Content of organic matter in the upper 10 inches: 62.0 percent

## Management

Major uses: Wildlife habitat and pasture

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Forest Land" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

# 1404—Berner muck, wooded, 0 to 1 percent slopes

#### Component Descriptions

#### Berner, wooded, and similar soils

Extent: 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits or till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.2 foot (July, August, September)

Ponding is deepest (depth, months): 0.3 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 13.2

Content of organic matter in the upper 10 inches: 87.5 percent

#### **Lupton and similar soils**

Extent: 4 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained Parent material: Organic materials

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 1.6 feet (February, August)

Ponding is shallowest (depth, months): 0.2 foot (July, August, September)

Ponding is deepest (depth, months): 0.3 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 23.9

Content of organic matter in the upper 10 inches: 80.0 percent

#### Northwood, wooded, and similar soils

Extent: 4 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits or till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5

feet (February)

Ponding is shallowest (depth, months): 0.2 foot (July, August, September)

Ponding is deepest (depth, months): 0.3 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 11.9 inches

Content of organic matter in the upper 10 inches: 67.5 percent

## Grygla and similar soils

Extent: 2 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits and till

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.1 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 8.7 inches

Content of organic matter in the upper 10 inches: 1.8 percent

### Management

Major uses: Forest land and wildlife habitat

For general and detailed information about managing this map unit, see the following sections:

- · "Agronomy" section
- "Forest Land" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

#### **Boash Series**

Drainage class: Poorly drained

Permeability: Upper part—slow; lower part—moderate

Landform: Lake plains

Parent material: Glaciolacustrine deposits over till

Slope range: 0 to 2 percent

Taxonomic classification: Clayey over loamy, smectitic

over mixed, superactive, calcareous, frigid Vertic Endoaquolls

## Typical Pedon

Boash clay loam, 0 to 2 percent slopes, 2,300 feet south and 400 feet west of the northeast corner of sec. 29, T. 162 N., R. 38 W.

- Ap—0 to 9 inches; black (N 2/0) clay loam, very dark gray (N 3/0) dry; weak fine and medium subangular blocky structure; friable; many fine roots; slightly effervescent; slightly alkaline; abrupt smooth boundary.
- Bg1—9 to 17 inches; very dark gray (5Y 3/1) clay; few fine faint dark olive gray (5Y 3/2) iron depletions; weak fine and medium subangular blocky structure parting to weak fine and very fine angular blocky; firm; common fine roots; very few faint very dark gray (5Y 3/1) pressure faces on ped exteriors; slightly effervescent; slightly alkaline; clear wavy boundary.
- Bg2—17 to 29 inches; olive gray (5Y 4/2) clay; few fine faint olive (5Y 4/3) iron concentrations; weak fine and medium subangular blocky structure; firm; common fine roots; very few faint dark olive gray (5Y 3/2) pressure faces on ped exteriors; strongly effervescent; slightly alkaline; clear wavy boundary.
- 2BCkg—29 to 65 inches; grayish brown (2.5Y 5/2) silt loam; few fine prominent pink (7.5YR 7/4) and strong brown (7.5YR 5/6) iron concentrations and few fine distinct gray (N 5/0) iron depletions; massive; firm; few fine roots; few fine rounded pale yellow (2.5Y 8/2) soft masses of lime between peds; strongly effervescent; 2 percent gravel; slightly alkaline; clear wavy boundary.
- 2Cg1—65 to 72 inches; olive gray (5Y 5/2) silt loam stratified with bands of dark olive gray (5Y 3/2) clay ¹/¹6 to ¹/8 inch thick; common fine prominent brown (7.5YR 4/4) and common medium distinct light olive brown (2.5Y 5/3) iron concentrations; massive; very firm; strongly effervescent; 5 percent gravel; slightly alkaline; gradual wavy boundary.
- 2Cg2—72 to 80 inches; grayish brown (2.5Y 5/2) silt loam; few fine prominent dark yellowish brown (10YR 4/6) and many coarse faint light olive brown (2.5Y 5/3) iron concentrations and few fine distinct gray (N 5/0) iron and manganese depletions; massive; firm; strongly effervescent; 10 percent gravel; slightly alkaline.

## Range in Characteristics

Depth to carbonates: 0 to 9 inches

Thickness of the mollic epipedon: 7 to 20 inches

Other features: Some pedons have a Bkg horizon.

Ap horizon:

Hue-10YR or N

Value—2

Chroma—0 or 1

Texture—clav loam

Content of rock fragments—0 to 5 percent

Bg horizon:

Hue—2.5Y, 5Y, or N

Value—3 or 4

Chroma—0 to 2

Texture—silty clay or clay

Content of rock fragments—0 to 5 percent

2BCka horizon:

Hue-2.5Y or 5Y

Value-5 or 6

Chroma—1 or 2

Texture—loam or silt loam

Content of rock fragments—2 to 10 percent

2Cg horizon:

Hue-2.5Y or 5Y

Value—3 to 6

Chroma—2

Texture—loam, clay loam, silt loam, or silt loam

stratified with bands of clay

Content of rock fragments—2 to 10 percent

# 644—Boash clay loam, 0 to 2 percent slopes

#### Component Descriptions

## Boash and similar soils

Extent: 85 percent of the unit

Geomorphic description: Flats on lake plains; swales

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Clay loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): At

the surface (April)

Wet soil moisture status is lowest (depth, months): 3.0

feet (August)

Ponding does not occur (months): January, February,

March, December

Ponding is deepest (depth, months): 0.3 foot (April,

May, June, November)

Available water capacity to a depth of 60 inches: 9.6

Content of organic matter in the upper 10 inches: 4.3 percent

### Percy and similar soils

Extent: 7 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Till Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8

feet (August)

Ponding does not occur (months): January, February,

March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April,

May, June, September, October, November)

Available water capacity to a depth of 60 inches: 10.1 inches

Content of organic matter in the upper 10 inches: 6.5

percent

#### Woodslake and similar soils

Extent: 5 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Clay

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At

the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 1.6

feet (February, August) Ponding depth: 0.5 foot all year

Available water capacity to a depth of 60 inches: 7.9

inches

Content of organic matter in the upper 10 inches: 3.4

percent

# Strandquist and similar soils

Extent: 3 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.1 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, October)

Available water capacity to a depth of 60 inches: 6.3 inches

Content of organic matter in the upper 10 inches: 3.6 percent

## Management

Major use: Cropland

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

# **Borup Series**

Drainage class: Poorly drained

Permeability: Moderately rapid or rapid

Landform: Lake plains

Parent material: Glaciolacustrine deposits

Slope range: 0 to 2 percent

Taxonomic classification: Coarse-silty, mixed, superactive, frigid Typic Calciaquolls

### Typical Pedon

Borup silt loam, 0 to 2 percent slopes, 500 feet south and 300 feet west of the northeast corner of sec. 27, T. 163 N., R. 37 W.

Ap—0 to 8 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; weak medium subangular blocky structure; very friable; strongly effervescent; slightly alkaline; abrupt smooth boundary.

Bkg—8 to 15 inches; grayish brown (2.5Y 5/2) very fine sandy loam; many fine distinct light olive brown (2.5Y 5/4) iron concentrations; weak fine subangular blocky structure; very friable; strongly

effervescent; moderately alkaline; clear smooth boundary.

Cg1—15 to 36 inches; light brownish gray (2.5Y 6/2) silt loam; common medium faint light yellowish brown (2.5Y 6/3) and common medium distinct olive yellow (2.5Y 6/6) iron concentrations; massive; very friable; few fine black (N 2/0) manganese concretions; strongly effervescent; moderately alkaline; clear wavy boundary.

Cg2—36 to 64 inches; light brownish gray (2.5Y 6/2) silt loam; many medium faint light yellowish brown (2.5Y 6/3) and common medium distinct olive yellow (2.5Y 6/6) iron concentrations; massive; friable; strongly effervescent; moderately alkaline; clear wavy boundary.

Cg3—64 to 80 inches; light brownish gray (2.5Y 6/2) silt loam; common medium faint light yellowish brown (2.5Y 6/3) and few fine prominent dark yellowish brown (10YR 4/6) iron concentrations; massive; firm; strongly effervescent; moderately alkaline.

#### Range in Characteristics

Thickness of the mollic epipedon: 7 to 13 inches

Ap horizon:

Hue—10YR

Value—2 or 3

Chroma—1

Texture—silt loam or loam

Bkg horizon:

Hue—10YR, 2.5Y, or 5Y

Value—4 to 6

Chroma—1 or 2

Texture—very fine sandy loam, loam, or silt loam

Cq horizon:

Hue-2.5Y or 5Y

Value-6

Chroma—2 or 3

Texture—very fine sand, loamy very fine sand, very fine sandy loam, loam, or silt loam

# 1134—Borup-Glyndon complex, 0 to 2 percent slopes

#### Component Descriptions

#### Borup and similar soils

Extent: 55 percent of the unit

Geomorphic description: Flats on lake plains; swales

on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June)

Available water capacity to a depth of 60 inches: 11.1

Content of organic matter in the upper 10 inches: 5.7 percent

## Glyndon and similar soils

Extent: 35 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Very fine sandy loam Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 1.6 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 11.6

Content of organic matter in the upper 10 inches: 4.0 percent

#### Augsburg, depressional, and similar soils

Extent: 5 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Mucky very fine sandy

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 3.0 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September, October)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, November, December)

Available water capacity to a depth of 60 inches: 10.1 inches

Content of organic matter in the upper 10 inches: 6.1 percent

#### Skime and similar soils

Extent: 5 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 4 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained Parent material: Glaciolacustrine deposits

Floodina: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (July, August)

Ponding: None

Available water capacity to a depth of 60 inches: 5.1

Content of organic matter in the upper 10 inches: 0.9 percent

## Management

Major use: Cropland

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

# 1298—Borup silt loam, 0 to 2 percent slopes

## Component Descriptions

# Borup and similar soils

Extent: 90 percent of the unit

Geomorphic description: Flats on lake plains; swales

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Silt loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June)

Available water capacity to a depth of 60 inches: 11.6 inches

Content of organic matter in the upper 10 inches: 5.2 percent

#### Augsburg, depressional, and similar soils

Extent: 3 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Mucky very fine sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 3.0 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September, October)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, November, December)

Available water capacity to a depth of 60 inches: 10.1 inches

Content of organic matter in the upper 10 inches: 6.1 percent

#### Glyndon and similar soils

Extent: 3 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Very fine sandy loam Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 1.6 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 11.6 inches

Content of organic matter in the upper 10 inches: 4.0 percent

## Sago and similar soils

Extent: 2 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 13.4 inches

Content of organic matter in the upper 10 inches: 72.5 percent

## Skime and similar soils

Extent: 2 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 4 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (July, August)

Ponding: None

Available water capacity to a depth of 60 inches: 5.1

Content of organic matter in the upper 10 inches: 0.9 percent

## Management

Major use: Cropland

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

### **Bullwinkle Series**

Drainage class: Very poorly drained

Permeability: Upper part—moderately rapid; lower

part—moderate Landform: Lake plains

Parent material: Organic materials over glaciolacustrine deposits or till

Slope range: 0 to 1 percent

Taxonomic classification: Loamy, mixed, euic, frigid

Terric Haplosaprists

## Typical Pedon

Bullwinkle muck, 0 to 1 percent slopes, 10 feet north and 1,650 feet west of the southeast corner of sec. 26, T. 164 N., R. 40 W.

- Oa1—0 to 16 inches; muck, dark reddish brown (5YR 2.5/2) broken face and rubbed; about 30 percent fiber, 10 percent rubbed; weak thick platy structure; very friable; many fine roots; 30 percent wood fragments; neutral; clear wavy boundary.
- Oa2—16 to 32 inches; muck, dark reddish brown (5YR 2.5/2) broken face and rubbed; about 25 percent fiber, 7 percent rubbed; weak thick platy structure; very friable; many fine roots; 30 percent wood fragments; neutral; clear wavy boundary.
- Oa3—32 to 48 inches; muck, dark reddish brown (5YR 2.5/2) broken face and rubbed; about 25 percent fiber, 7 percent rubbed; weak thick platy structure; very friable; many fine roots; 35 percent wood fragments; neutral; abrupt wavy boundary.
- A—48 to 52 inches; black (N 2/0) silt loam; massive; friable; common dark brown (7.5YR 3/3) organic coats on faces of peds; slightly effervescent; slightly alkaline; abrupt wavy boundary.
- Cg—52 to 80 inches; light brownish gray (2.5Y 6/2) silt loam; common medium distinct yellowish brown (10YR 5/6) iron concentrations and common coarse faint grayish brown (2.5Y 5/2) iron depletions; massive; friable; 2 percent gravel; slightly effervescent; moderately alkaline.

# Range in Characteristics

Depth to carbonates: 16 to 51 inches

Thickness of the organic material: 16 to 51 inches

Oa horizon:

Hue—5YR or 10YR

Value—2 or 3

Chroma—1 or 2

Texture—muck

Content of wood fragments—30 to 35 percent

A horizon:

Hue-10YR, 2.5Y, or N

Value—2

Chroma-0 or 1

Texture—silt loam

Content of rock fragments—0 to 2 percent

Cg horizon:

Hue-2.5Y or 5Y

Value—6

Chroma—2

Texture—fine sandy loam, loam, or silt loam Content of rock fragments—0 to 10 percent

# 561—Bullwinkle muck, 0 to 1 percent slopes

## **Component Descriptions**

#### Bullwinkle and similar soils

Extent: 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over

glaciolacustrine deposits or till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.2 foot (July, August, September)

Ponding is deepest (depth, months): 0.3 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 22.7 inches

Content of organic matter in the upper 10 inches: 72.5 percent

## Lupton and similar soils

Extent: 4 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 1.6 feet (February, August)

Ponding is shallowest (depth, months): 0.2 foot (July, August, September)

Ponding is deepest (depth, months): 0.3 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 23.9 inches

Content of organic matter in the upper 10 inches: 80.0 percent

## Northwood, wooded, and similar soils

Extent: 4 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits or till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.2 foot (July, August, September)

Ponding is deepest (depth, months): 0.3 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 11.9 inches

Content of organic matter in the upper 10 inches: 67.5 percent

#### Chilgren and similar soils

Extent: 2 percent of the unit

Geomorphic description: Flats on lake plains; swales on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Fine sandy loam Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Till Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 10.4

Content of organic matter in the upper 10 inches: 1.4 percent

# Management

Major uses: Forest land and wildlife habitat

For general and detailed information about managing this map unit, see the following sections:

"Agronomy" section

"Forest Land" section

"Recreation" section

• "Wildlife Habitat" section

• "Engineering" and "Soil Properties" sections

#### Cathro Series

Drainage class: Very poorly drained

Permeability: Upper part—moderately rapid to moderately slow; lower part—moderate or

moderately slow Landform: Lake plains

Parent material: Organic materials over glaciolacustrine deposits or till

Slope range: 0 to 1 percent

Taxonomic classification: Loamy, mixed, euic, frigid Terric Haplosaprists

## Typical Pedon

Cathro muck, 1,200 feet north and 300 feet east of the southwest corner of sec. 9, T. 162 N., R. 37 W.

Oa1—0 to 8 inches; muck, very dark gray (5YR 3/1) broken face, black (5YR 2/1) rubbed; about 28 percent fiber, 14 percent rubbed; weak fine granular structure; friable; many fine roots; 5 percent wood fragments; moderately acid; clear smooth boundary.

Oa2—8 to 20 inches; muck, very dark brown (10YR

2/2) broken face and rubbed; about 25 percent fiber, 12 percent rubbed; weak medium subangular blocky structure; friable; common very fine roots; 10 percent wood fragments; moderately acid; clear smooth boundary.

- Oa3—20 to 40 inches; muck, very dark brown (10YR 2/2) broken face and rubbed; about 35 percent fiber, 15 percent rubbed; moderate medium subangular blocky structure; friable; 10 percent wood fragments; moderately acid; abrupt smooth boundary.
- A-40 to 42 inches; very dark grayish brown (2.5Y 3/2) loam; common fine prominent yellowish brown (10YR 5/6) iron concentrations; weak fine subangular blocky structure; friable; strongly effervescent; slightly alkaline; clear smooth boundary.
- Cg—42 to 80 inches; light brownish gray (2.5Y 6/2) silt loam; few fine prominent yellowish brown (10YR 5/6) iron concentrations; massive; friable; strongly effervescent; slightly alkaline.

## Range in Characteristics

Depth to carbonates: 16 to more than 60 inches Thickness of the organic material: 16 to 51 inches

Oa horizon:

Hue-10YR, 7.5YR, 5YR, or N

Value-2 or 3

Chroma—0 to 3

Texture—muck

A horizon:

Hue-10YR, 2.5Y, or 5Y

Value—2 or 3

Chroma—1 or 2

Texture—sandy loam, fine sandy loam, loam, or the mucky analogs of these textures

Content of rock fragments—0 to 5 percent

Cg horizon:

Hue-2.5Y or 5Y

Value—4 to 6

Chroma—1 to 3

Texture—fine sandy loam, loam, silt loam, or silty clay loam

Content of rock fragments—0 to 10 percent

# 544—Cathro muck, MAP 18-22, 0 to 1 percent slopes

## Component Descriptions

#### Cathro and similar soils

Extent: 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

Drainage class: Very poorly drained Parent material: Organic materials over

glaciolacustrine deposits or till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May, June)

Wet soil moisture status is lowest (depth, months): 2.1 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (January, February, July, August, September, October, November, December)

Ponding is deepest (depth, months): 0.5 foot (March, April, May, June)

Available water capacity to a depth of 60 inches: 19.8 inches

Content of organic matter in the upper 10 inches: 72.5 percent

### Percy, very cobbly, and similar soils

Extent: 4 percent of the unit

Geomorphic description: Flats on lake plains; swales

on lake plains

Slope range: 0 to 2 percent Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Till Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8

feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 10.0 inches

Content of organic matter in the upper 10 inches: 5.4 percent

#### Grygla and similar soils

Extent: 3 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits and till

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.1 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 8.7 inches

Content of organic matter in the upper 10 inches: 1.8 percent

## Seelyeville and similar soils

Extent: 3 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 1.6 feet (February, August)

Ponding is shallowest (depth, months): 0.3 foot (January, February, July, August, September, October, November, December)

Ponding is deepest (depth, months): 0.5 foot (March, April, May, June)

Available water capacity to a depth of 60 inches: 23.9 inches

Content of organic matter in the upper 10 inches: 62.0 percent

#### Management

Major uses: Wildlife habitat and pasture

For general and detailed information about managing this map unit, see the following sections:

- · "Agronomy" section
- "Forest Land" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

# 1807—Cathro muck, ponded, MAP 22-30, 0 to 1 percent slopes

## **Component Descriptions**

#### Cathro, ponded, and similar soils

Extent: 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits or till

Flooding: None

Wet soil moisture status: At the surface all year

Ponding depth: 1.0 foot all year

Available water capacity to a depth of 60 inches: 16.4

inches

Content of organic matter in the upper 10 inches: 72.5 percent

### Haug and similar soils

Extent: 4 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained

Parent material: Organic materials over till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 11.8 inches

Content of organic matter in the upper 10 inches: 70.0 percent

#### Seelyeville, ponded, and similar soils

Extent: 4 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials

Flooding: None

Wet soil moisture status: At the surface all year

Ponding depth: 1.0 foot all year

Available water capacity to a depth of 60 inches: 23.9

inches

Content of organic matter in the upper 10 inches: 62.0 percent

### Percy and similar soils

Extent: 2 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 2 percent Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Till Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8

feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 10.0 inches

Content of organic matter in the upper 10 inches: 5.4 percent

## Management

Major use: Wildlife habitat

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- · "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

# Chilgren Series

Drainage class: Poorly drained

Permeability: Moderate Landform: Lake plains Parent material: Till

Slope range: 0 to 2 percent

Taxonomic classification: Fine-loamy, mixed, superactive, frigid Typic Endoaqualfs

## Typical Pedon

Chilgren fine sandy loam, 0 to 2 percent slopes, 400 feet south and 1,400 feet west of the northeast corner of sec. 35, T. 162 N., R. 36 W.

- A—0 to 5 inches; very dark gray (10YR 3/1) fine sandy loam, gray (10YR 6/1) dry; weak fine subangular blocky structure; very friable; common very fine and fine roots; 1 percent gravel; neutral; clear smooth boundary.
- E—5 to 9 inches; grayish brown (10YR 5/2) fine sandy loam; weak medium subangular blocky structure; very friable; common very fine and fine roots and few medium roots; 2 percent gravel; neutral; clear smooth boundary.
- Btg—9 to 16 inches; dark grayish brown (2.5Y 4/2) loam; few fine prominent dark yellowish brown (10YR 4/6) and common fine distinct light olive brown (2.5Y 5/3) iron concentrations; moderate medium subangular blocky structure; firm; common very fine and fine roots and few medium and coarse roots; few distinct discontinuous very dark grayish brown (2.5Y 3/2) and common faint discontinuous very dark grayish brown (2.5Y 3/2) clay films on faces of peds; 2 percent gravel; slightly acid; clear smooth boundary.
- Bkg—16 to 34 inches; light brownish gray (2.5Y 6/2) loam; common medium faint light yellowish brown (2.5Y 6/3), common medium distinct light olive brown (2.5Y 5/4), and few fine prominent dark yellowish brown (10YR 4/6) iron concentrations; weak coarse subangular blocky structure; friable; few very fine and fine roots; few fine distinct pale yellow (2.5Y 8/2) soft masses of lime between peds; strongly effervescent; 3 percent gravel and 2 percent cobbles; slightly alkaline; clear wavy boundary.
- Cg—34 to 80 inches; light yellowish brown (2.5Y 6/3) loam that has few lenses of sand less than 1/4 inch thick; common medium faint light brownish gray (2.5Y 6/2) iron depletions; common medium distinct light olive brown (2.5Y 5/4) and few fine prominent yellowish brown (10YR 5/6) iron concentrations; massive; friable; strongly effervescent; 5 percent gravel and 5 percent cobbles, including 1 percent weathered fragments of granite (20 to 75 mm); slightly alkaline.

## Range in Characteristics

Depth to carbonates: 12 to 20 inches

A horizon:

Hue-10YR

Value-2 or 3

Chroma—1

Texture—fine sandy loam

Content of rock fragments—0 to 2 percent

#### E horizon:

Hue-10YR or 2.5Y

Value—5 or 6

Chroma—1 or 2

Texture—fine sandy loam or loamy fine sand Content of rock fragments—0 to 2 percent

#### Btg horizon:

Hue-2.5Y

Value—3 to 5

Chroma—2

Texture—loam, clay loam, or sandy clay loam Content of rock fragments—2 to 5 percent

#### Bkg horizon:

Hue-2.5Y

Value—5 or 6

Chroma-2 or 3

Texture—loam or fine sandy loam

Content of rock fragments—2 to 15 percent

#### Cg horizon:

Hue-2.5Y

Value—5 or 6

Chroma-2 or 3

Texture—loam or fine sandy loam

Content of rock fragments—2 to 15 percent

# 404—Chilgren fine sandy loam, 0 to 2 percent slopes

## Component Descriptions

## Chilgren and similar soils

Extent: 85 percent of the unit

Geomorphic description: Flats on lake plains; swales

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Till Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8

feet (August)

Ponding does not occur (months): January, February, March, July, August, December

water, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 10.4 inches

Content of organic matter in the upper 10 inches: 1.4 percent

#### Garnes and similar soils

Extent: 5 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits and till

Flooding: None

Wet soil moisture status is highest (depth, months):

2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7

feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 10.2

inches

Content of organic matter in the upper 10 inches: 1.2

percent

## Grygla and similar soils

Extent: 5 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits and till

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.1

feet (August)

Ponding does not occur (months): January, February, March, July, August, September, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 8.7 inches

Content of organic matter in the upper 10 inches: 1.8 percent

### Haug and similar soils

Extent: 5 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 11.8 inches

Content of organic matter in the upper 10 inches: 70.0 percent

## Management

Major uses: Forest land and pasture

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Forest Land" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

## Clearriver Series

Drainage class: Moderately well drained

Permeability: Rapid Landform: Beach ridges

Parent material: Beach deposits Slope range: 0 to 3 percent

Taxonomic classification: Mixed, frigid Aquic

Udipsamments

#### Typical Pedon

Clearriver loamy fine sand, 0 to 3 percent slopes, 25 feet south and 1,150 feet west of the northeast corner of sec. 36, T. 161 N., R. 35 W.

Ap—0 to 2 inches; black (10YR 2/1) loamy fine sand, very dark gray (10YR 3/1) dry; weak fine subangular blocky structure; very friable; many

- very fine and fine roots; slightly acid; abrupt smooth boundary.
- E1—2 to 7 inches; dark yellowish brown (10YR 3/4) loamy sand; few fine distinct dark yellowish brown (10YR 4/6) iron concentrations; weak fine subangular blocky structure; very friable; many very fine and fine roots; slightly acid; clear wavy boundary.
- E2—7 to 21 inches; dark yellowish brown (10YR 4/4) loamy sand; common fine distinct strong brown (7.5YR 4/6) iron concentrations; weak fine subangular blocky structure; very friable; common very fine roots; slightly acid; clear smooth boundary.
- E&Bt—21 to 27 inches; brown (10YR 5/3) gravelly coarse sand (E); common fine faint grayish brown (10YR 5/2) iron depletions and common fine distinct brownish yellow (10YR 6/6) iron concentrations; single grain; loose; few very fine roots; strongly effervescent; 25 percent gravel; neutral; few lamellae of brown (7.5YR 4/4) sandy loam ¹/2 inch to 2 inches thick (Bt); common fine distinct strong brown (7.5YR 4/6) iron concentrations; weak fine subangular blocky structure; friable; few very fine roots; very few faint discontinuous dark brown (7.5YR 3/3) clay films on faces of peds and in pores; 5 percent gravel; neutral; abrupt wavy boundary.
- C1—27 to 45 inches; brown (10YR 5/3) coarse sand; common fine distinct dark yellowish brown (10YR 4/6) iron concentrations and few fine faint grayish brown (10YR 5/2) iron depletions; single grain; loose; strongly effervescent; 10 percent gravel; slightly alkaline; clear wavy boundary.
- C2—45 to 56 inches; pale brown (10YR 6/3) fine sand; few medium faint light brownish gray (10YR 6/2) iron depletions; single grain; loose; slightly effervescent; slightly alkaline; clear wavy boundary.
- C3—56 to 80 inches; light brownish gray (10YR 6/2) gravelly coarse sand; single grain; loose; strongly effervescent; 25 percent gravel; slightly alkaline.

## Range in Characteristics

Depth to carbonates: 20 to 36 inches

A or Ap horizon:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—loamy fine sand

Content of rock fragments—0 to 2 percent

E horizon:

Hue-10YR

Value—3 to 6

Chroma—2 to 6

Texture—loamy sand, sand, fine sand, or loamy

fine sand

Content of rock fragments—0 to 5 percent

## E part of E&Bt horizon:

Hue-7.5YR or 10YR

Value—4 or 5

Chroma-2 to 4

Texture—coarse sand, sand, loamy sand, or fine

sand

Content of rock fragments—0 to 25 percent

#### Bt part of E&Bt horizon:

Hue-7.5YR or 10YR

Value-4 or 5

Chroma—4

Texture—loamy sand or sandy loam

Content of rock fragments—0 to 25 percent

#### C horizon:

Hue—10YR or 2.5Y

Value—5 or 6

Chroma-2 to 4

Texture—coarse sand, sand, or fine sand Content of rock fragments—5 to 30 percent

794—Clearriver loamy fine sand, 0 to 3

# Component Descriptions

# Clearriver and similar soils

percent slopes

Extent: 85 percent of the unit

Geomorphic description: Beach ridges

Position on the landform: Shoulders, backslopes

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained

Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

3.0 feet (April)

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet (July, August)

Pondina: None

Available water capacity to a depth of 60 inches: 3.5

inches

Content of organic matter in the upper 10 inches: 0.5

percent

#### Hiwood and similar soils

Extent: 7 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 1 to 6 percent

Texture of the surface layer: Fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

2.5 feet (April)

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet (July, August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.7

inches

Content of organic matter in the upper 10 inches: 0.6

percent

#### Meehan and similar soils

Extent: 5 percent of the unit

Geomorphic description: Flats on lake plains; rises on

lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Somewhat poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

1.5 feet (April)

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet (August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.4

inches

Content of organic matter in the upper 10 inches: 1.4

percent

#### Faunce and similar soils

Extent: 3 percent of the unit

Geomorphic description: Beach ridges

Position on the landform: Shoulders, summits

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Well drained Parent material: Beach deposits

Flooding: None

Depth to wet soil moisture status: More than 6.7 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 3.6 inches

Content of organic matter in the upper 10 inches: 0.5 percent

#### Management

Major uses: Forest land and pasture

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Forest Land" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

#### Colvin Series

Drainage class: Poorly drained

Permeability: Moderately slow or moderate

Landform: Lake plains

Parent material: Glaciolacustrine deposits

Slope range: 0 to 2 percent

Taxonomic classification: Fine-silty, mixed, superactive, frigid Typic Calciaquolls

### Typical Pedon

Colvin silty clay loam, 0 to 2 percent slopes, 2,350 feet north and 350 feet west of the southeast corner of sec. 11, T. 162 N., R. 40 W.

- Ap—0 to 11 inches; black (N 2/0) silty clay loam, very dark gray (N 3/0) dry; moderate medium subangular blocky structure; friable; few fine roots; slightly effervescent; slightly alkaline; clear smooth boundary.
- Bkg1—11 to 16 inches; gray (10YR 5/1) silty clay loam; moderate medium subangular blocky structure parting to weak fine subangular blocky; friable; few fine roots; many fine distinct white (10YR 8/1) carbonate coats on faces of peds; few fine distinct light gray (10YR 7/1) soft masses of lime between peds; violently effervescent; moderately alkaline; clear wavy boundary.
- Bkg2—16 to 28 inches; light brownish gray (2.5Y 6/2) silt loam; common fine distinct light olive brown (2.5Y 5/4) iron concentrations; moderate medium subangular blocky structure parting to weak fine subangular blocky; friable; many fine prominent

white (10YR 8/1) carbonate coats on faces of peds; few fine prominent light gray (10YR 7/1) soft masses of lime between peds; violently effervescent; moderately alkaline; gradual wavy boundary.

- Bkg3—28 to 41 inches; olive gray (5Y 5/2) silty clay loam; common fine faint olive (5Y 5/3) iron concentrations; moderate medium subangular blocky structure parting to weak fine subangular blocky; friable; many fine prominent white (10YR 8/1) carbonate coats on faces of peds; few fine prominent light gray (10YR 7/1) soft masses of lime between peds; few fine white (10YR 8/1) shells throughout; violently effervescent; moderately alkaline; gradual wavy boundary.
- Cg1—41 to 45 inches; light olive gray (5Y 6/2) very fine sandy loam; common fine prominent light olive brown (2.5Y 5/6) and few fine prominent olive yellow (2.5Y 6/6) iron concentrations; massive; friable; strongly effervescent; moderately alkaline; gradual wavy boundary.
- Cg2—45 to 71 inches; light olive gray (5Y 6/2) silt loam; common fine prominent light olive brown (2.5Y 5/6) iron concentrations; massive; friable; many fine prominent white (10YR 8/1) carbonate coats on faces of peds; strongly effervescent; slightly alkaline; gradual wavy boundary.
- Cg3—71 to 80 inches; light olive gray (5Y 6/2) silt loam; common fine prominent light olive brown (2.5Y 5/6 and 5/4) iron concentrations; massive; friable; strongly effervescent; slightly alkaline.

#### Range in Characteristics

Thickness of the mollic epipedon: 8 to 14 inches

Ap horizon:

Hue-10YR or N

Value—2

Chroma—0 or 1

Texture—silty clay loam

Bkg horizon:

Hue—10YR, 2.5Y, or 5Y

Value—3 to 6

Chroma—1 or 2

Texture—silt loam or silty clay loam

Cg horizon:

Hue-2.5Y or 5Y

Value—5 or 6

Chroma—2

Texture—silt loam, silty clay loam, or very fine sandy loam

# 47—Colvin silty clay loam, 0 to 2 percent slopes

## **Component Descriptions**

#### Colvin and similar soils

Extent: 85 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Silty clay loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8

feet (August)

Ponding does not occur (months): January, February, March, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, July, September, October, November)

Available water capacity to a depth of 60 inches: 11.1

inches

Content of organic matter in the upper 10 inches: 5.5 percent

#### Bearden and similar soils

Extent: 5 percent of the unit

Geomorphic description: Rises on lake plains; flats on

lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Silt loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.0 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 11.6 inches

Content of organic matter in the upper 10 inches: 4.3 percent

#### Grano and similar soils

Extent: 5 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent Texture of the surface layer: Clay

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At

the surface (April)

Wet soil moisture status is lowest (depth, months): 3.0

feet (August)

Ponding does not occur (months): January, February,

March, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, November)

Available water capacity to a depth of 60 inches: 9.9 inches

Content of organic matter in the upper 10 inches: 4.5 percent

#### Sax and similar soils

Extent: 5 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 14.5 inches

Content of organic matter in the upper 10 inches: 47.5 percent

## Management

Major use: Cropland

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

### Corliss Series

Drainage class: Excessively drained

Permeability: Rapid Landform: Beach ridges

Parent material: Beach deposits Slope range: 1 to 6 percent

Taxonomic classification: Mixed, frigid Typic

Udipsamments

## Typical Pedon

Corliss loamy sand (fig. 3), 1 to 6 percent slopes, 1,500 feet north and 1,400 feet west of the southeast corner of sec. 21, T. 162 N., R. 40 W.

- Ap—0 to 8 inches; black (10YR 2/1) loamy sand; weak fine granular structure; very friable; many fine roots; few distinct patchy white (10YR 8/1) carbonate coats on underside of rock fragments; 3 percent gravel; neutral; clear smooth boundary.
- Bw—8 to 18 inches; brown (10YR 4/3) very gravelly sand; single grain; loose; common fine roots; few distinct patchy white (10YR 8/1) carbonate coats on underside of rock fragments; slightly effervescent; 45 percent gravel; slightly alkaline; clear wavy boundary.
- C1—18 to 28 inches; pale brown (10YR 6/3) sand; single grain; loose; few distinct patchy white (10YR 8/1) carbonate coats on underside of rock fragments; slightly effervescent; 10 percent gravel; slightly alkaline; gradual wavy boundary.
- C2—28 to 33 inches; pale brown (10YR 6/3) very gravelly sand; single grain; loose; few distinct patchy white (10YR 8/1) carbonate coats on underside of rock fragments; slightly effervescent; 35 percent gravel; slightly alkaline; gradual wavy boundary.
- C3—33 to 42 inches; pale brown (10YR 6/3) very gravelly sand; single grain; loose; slightly effervescent; 55 percent gravel; slightly alkaline; gradual wavy boundary.
- C4—42 to 80 inches; light brownish gray (10YR 6/2) sand; single grain; loose; very slightly effervescent; slightly alkaline.

#### Range in Characteristics

Depth to carbonates: 8 to 20 inches

A or Ap horizon:

Hue—10YR

Value—2

Chroma—1 or 2

Texture—loamy sand

Content of rock fragments—0 to 5 percent

Bw horizon:

Hue—10YR

Value—4

Chroma—4

Texture—loamy sand or sand

Content of rock fragments—0 to 45 percent

C horizon:

Hue-10YR or 2.5Y

Value—5 or 6

Chroma—3

Texture—sand or coarse sand

Content of rock fragments—0 to 55 percent

# 721B—Corliss loamy sand, 1 to 6 percent slopes

### **Component Descriptions**

#### Corliss and similar soils

Extent: 85 percent of the unit

Geomorphic description: Beach ridges

Position on the landform: Shoulders, summits,

backslopes

Slope range: 1 to 6 percent

Texture of the surface layer: Loamy sand

Depth to restrictive feature: Very deep (more than 60

nches)

Drainage class: Excessively drained

Parent material: Beach deposits

Floodina: None

Depth to wet soil moisture status: More than 6.7 feet

all year Ponding: None

Available water capacity to a depth of 60 inches: 2.9

inches

Content of organic matter in the upper 10 inches: 1.7

percent

#### Rushlake and similar soils

Extent: 10 percent of the unit

Geomorphic description: Rises on beach plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained

Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

3.0 feet (April)

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet (July, August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.0

inches

Content of organic matter in the upper 10 inches: 1.9 percent

#### Hangaard and similar soils

Extent: 4 percent of the unit

Geomorphic description: Swales on beach plains; flats on beach plains

Slope range: 0 to 2 percent

Texture of the surface layer: Sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.3 foot (April)

Wet soil moisture status is lowest (depth, months): 3.3 feet (February, August)

Ponding does not occur (months): January, February, March, July, August, September, October, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 2.9

Content of organic matter in the upper 10 inches: 5.5 percent

#### Pits, gravel

Extent: 1 percent of the unit Slope range: 1 to 50 percent

Definition: Areas from which sand and gravel have

been removed

#### Management

Major uses: Pasture, hayland, and cropland

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Forest Land" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

#### Cormant Series

Drainage class: Poorly drained and very poorly

drained
Permeability: Rapid
Landform: Lake plains

Parent material: Glaciolacustrine deposits Slope range: 0 to 2 percent

Taxonomic classification: Mixed, frigid Mollic

**Psammaguents** 

## Typical Pedon

Cormant loamy fine sand, 0 to 2 percent slopes, 550 feet north and 2,000 feet east of the southwest corner of sec. 15, T. 159 N., R. 39 W.

- Ap—0 to 6 inches; very dark gray (10YR 3/1) loamy fine sand, dark gray (10YR 4/1) dry; weak fine subangular blocky structure; very friable; many very fine and fine roots; slightly acid; abrupt smooth boundary.
- Cg1—6 to 11 inches; light brownish gray (2.5Y 6/2) fine sand; single grain; loose; few very fine roots; neutral; clear smooth boundary.
- Cg2—11 to 30 inches; light brownish gray (2.5Y 6/2) fine sand; common fine prominent dark yellowish brown (10YR 4/6) iron concentrations; single grain; loose; neutral; clear wavy boundary.
- Cg3—30 to 45 inches; light brownish gray (2.5Y 6/2) fine sand; many medium prominent dark yellowish brown (10YR 4/6) iron concentrations; single grain; loose; neutral; clear wavy boundary.
- Cg4—45 to 55 inches; light brownish gray (2.5Y 6/2) fine sand; few fine distinct yellowish brown (10YR 5/6) iron concentrations; single grain; loose; neutral; gradual wavy boundary.
- Cg5—55 to 70 inches; light brownish gray (2.5Y 6/2) fine sand; few fine distinct yellowish brown (10YR 5/6) and common fine distinct olive brown (2.5Y 4/3) iron concentrations; single grain; loose; slightly effervescent; slightly alkaline; clear wavy boundary.
- Cg6—70 to 75 inches; light brownish gray (2.5Y 6/2) fine sand; common fine distinct olive brown (2.5Y 4/3) iron concentrations; single grain; loose; many distinct light gray (2.5Y 7/1) soft masses of lime throughout; slightly effervescent; slightly alkaline; clear wavy boundary.
- Cg7—75 to 80 inches; light brownish gray (2.5Y 6/2) fine sand; few fine distinct light olive brown (2.5Y 5/6) iron concentrations; single grain; loose; common distinct light gray (2.5Y 7/1) soft masses of lime throughout; slightly effervescent; slightly alkaline.

### Range in Characteristics

Depth to carbonates: More than 36 inches

Ap horizon:

Hue—10YR Value—2

Chroma—1 or 2

Texture—loamy fine sand

Ca horizon:

Hue-2.5Y

Value-5 or 6

Chroma—2

Texture—fine sand, sand, or loamy sand

# 117—Cormant loamy fine sand, 0 to 2 percent slopes

# **Component Descriptions**

#### Cormant and similar soils

Extent: 85 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.9

feet (August)

Ponding does not occur (months): January, February, March, July, August, September, November,

December

Ponding is deepest (depth, months): 0.3 foot (April,

Available water capacity to a depth of 60 inches: 4.9

Content of organic matter in the upper 10 inches: 3.9

percent

#### Leafriver and similar soils

Extent: 7 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over

glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At

the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5

feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 8.4

Content of organic matter in the upper 10 inches: 70.0 percent

#### **Epoufette and similar soils**

Extent: 3 percent of the unit

Geomorphic description: Swales on beach plains; flats

on beach plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

0.3 foot (April)

Wet soil moisture status is lowest (depth, months): 3.3

feet (February, August)

Ponding does not occur (months): January, February, March, July, August, September, November,

December

Ponding is deepest (depth, months): 0.3 foot (April,

Available water capacity to a depth of 60 inches: 2.8

Content of organic matter in the upper 10 inches: 4.0 percent

#### Redby and similar soils

Extent: 3 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60

Drainage class: Somewhat poorly drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 1.5 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.8

Content of organic matter in the upper 10 inches: 0.6 percent

## Grygla, depressional, and similar soils

Extent: 2 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Mucky loamy fine sand Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Glaciolacustrine deposits and till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 3.0 feet (February)

Ponding is shallowest (depth, months): 0.2 foot (July, August, September)

Ponding is deepest (depth, months): 0.3 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 7.8 inches

Content of organic matter in the upper 10 inches: 3.1 percent

## Management

Major uses: Forest land and pasture

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Forest Land" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

# 1206—Cormant-Redby complex, 0 to 2 percent slopes

### Component Descriptions

#### Cormant and similar soils

Extent: 55 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.9 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, October)

Available water capacity to a depth of 60 inches: 4.9 inches

Content of organic matter in the upper 10 inches: 4.5 percent

# Redby and similar soils

Extent: 35 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Somewhat poorly drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 1.5 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.8 inches

Content of organic matter in the upper 10 inches: 0.7 percent

#### Hiwood and similar soils

Extent: 5 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 1 to 6 percent

Texture of the surface layer: Fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (July, August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.7 inches

Content of organic matter in the upper 10 inches: 0.6 percent

## Leafriver and similar soils

Extent: 5 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 8.4 inches

Content of organic matter in the upper 10 inches: 70.0 percent

## Management

Major uses: Forest land and pasture

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Forest Land" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

#### Croke Series

Drainage class: Moderately well drained

Permeability: Upper part—moderately rapid; lower

part—slow Landform: Lake plains

Parent material: Glaciolacustrine deposits

Slope range: 0 to 2 percent

Taxonomic classification: Coarse-silty over clayey, mixed over smectitic, superactive, frigid Aquic Hapludolls

#### Typical Pedon

Croke very fine sandy loam, 0 to 2 percent slopes, 200 feet south and 550 feet east of the northwest corner of sec. 20, T. 161 N., R. 39 W.

Ap—0 to 12 inches; black (10YR 2/1) very fine sandy loam, very dark gray (10YR 3/1) dry; weak fine subangular blocky structure parting to weak very

fine subangular blocky; very friable; few very fine roots; neutral; clear smooth boundary.

Bw—12 to 16 inches; dark grayish brown (2.5Y 4/2) loamy very fine sand; weak fine subangular blocky structure parting to weak very fine subangular blocky; very friable; few very fine roots; slightly effervescent; neutral; clear wavy boundary.

C1—16 to 21 inches; light yellowish brown (2.5Y 6/3) loamy very fine sand; common medium distinct olive yellow (2.5Y 6/6) iron concentrations; weak very thin platy structure; very friable; few very fine roots; slightly effervescent; neutral; clear wavy boundary.

2C2—21 to 33 inches; olive gray (5Y 4/2) clay; common medium prominent dark yellowish brown (10YR 4/6) and common medium prominent light olive brown (2.5Y 5/4) iron concentrations; massive; firm; common medium white (5Y 8/1) soft masses of lime between peds; strongly effervescent; slightly alkaline; gradual wavy boundary.

2C3—33 to 80 inches; olive gray (5Y 4/2) clay; common medium prominent strong brown (7.5YR 4/6) and olive brown (2.5Y 4/4) iron concentrations; massive; firm; few medium white (5Y 8/1) soft masses of lime between peds; strongly effervescent; slightly alkaline.

## Range in Characteristics

Depth to carbonates: 12 to 30 inches

Thickness of the mollic epipedon: 8 to 12 inches

Ap horizon:

Hue—10YR

Value-2 or 3

Chroma—1

Texture—very fine sandy loam

Bw horizon:

Hue-10YR or 2.5Y

Value—3 to 5

Chroma—2 to 4

Texture—loamy very fine sand or silt loam

C horizon:

Hue—2.5Y

Value—5 or 6

Chroma-2 to 4

Texture—very fine sand, loamy very fine sand, or silt loam

2C horizon:

Hue-2.5Y or 5Y

Value—4 or 5

Chroma—1 or 2

Texture—clay

# 1918—Croke very fine sandy loam, 0 to 2 percent slopes

## Component Descriptions

#### Croke and similar soils

Extent: 85 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Very fine sandy loam

Depth to restrictive feature: Very deep (more than 60

Drainage class: Moderately well drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April, May)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 9.5 inches

Content of organic matter in the upper 10 inches: 5.0 percent

## Augsburg and similar soils

Extent: 13 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 2 percent Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 10.5 inches

Content of organic matter in the upper 10 inches: 4.8 percent

#### Grano and similar soils

Extent: 2 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At

the surface (April)

Wet soil moisture status is lowest (depth, months): 3.0

feet (August)

Ponding does not occur (months): January, February, March, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, November)

Available water capacity to a depth of 60 inches: 9.7

Content of organic matter in the upper 10 inches: 3.5 percent

## Management

Major uses: Cropland

For general and detailed information about managing this map unit, see the following sections:

• "Agronomy" section

· "Recreation" section

"Wildlife Habitat" section

• "Engineering" and "Soil Properties" sections

### Dalbo Series

Drainage class: Moderately well drained

Permeability: Upper part—moderate; middle part—slow or moderately slow; lower part—moderately slow or moderate

Landform: Lake plains

Parent material: Glaciolacustrine deposits

Slope range: 0 to 3 percent

Taxonomic classification: Fine, smectitic, frigid

Aquertic Hapludalfs

Taxadjunct features: The Dalbo soils in this survey area contain less clay than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soils.

## Typical Pedon

Dalbo loam, 0 to 3 percent slopes, 500 feet south and 100 feet east of the northwest corner of sec. 6, T. 161 N., R. 37 W.

Ap—0 to 6 inches; very dark gray (10YR 3/1) loam, gray (10YR 5/1) dry; weak fine subangular blocky structure; friable; common very fine and fine roots; slightly alkaline; abrupt wavy boundary.

E—6 to 15 inches; dark grayish brown (10YR 4/2) fine sandy loam; many fine faint brown (10YR 4/3) iron concentrations; weak fine subangular blocky structure; very friable; few very fine and fine roots; slightly alkaline; abrupt wavy boundary.

Bt—15 to 23 inches; olive brown (2.5Y 4/3) clay; many fine faint grayish brown (2.5Y 5/2) iron depletions; weak fine prismatic structure parting to weak fine angular blocky; firm; few very fine and fine roots; many faint very dark grayish brown (2.5Y 3/2) clay films on faces of peds and in pores; slightly alkaline; clear wavy boundary.

Bk-23 to 52 inches; very dark grayish brown (2.5Y 3/2) clay stratified with varves of light brownish gray (2.5Y 6/2) silt loam <sup>1</sup>/<sub>16</sub> to <sup>1</sup>/<sub>8</sub> inch thick; common fine distinct olive brown (2.5Y 4/4) iron concentrations; weak thin platy structure; firm; common light gray (2.5Y 7/2) soft masses of lime in ped interiors and on faces of peds; strongly effervescent; moderately alkaline; gradual wavy boundary.

C1—52 to 70 inches; light brownish gray (2.5Y 6/2) silty clay loam stratified with varves of very dark grayish brown (2.5Y 3/2) clay 1/16 to 1/4 inch thick; common fine prominent dark yellowish brown (10YR 4/6) and many medium prominent light yellowish brown (10YR 6/4) iron concentrations; weak thin platy structure; firm; common pale yellow (2.5Y 8/2) silt coats on faces of peds; slightly effervescent; 1 percent gravel; moderately alkaline; diffuse wavy boundary.

C2—70 to 80 inches; light brownish gray (2.5Y 6/2) silty clay stratified with varves of very dark grayish brown (2.5Y 3/2) clay <sup>1</sup>/<sub>16</sub> to <sup>1</sup>/<sub>4</sub> inch thick; common fine prominent dark yellowish brown (10YR 4/6) and many medium prominent light yellowish brown (10YR 6/4) iron concentrations; weak thin platy structure; firm; common pale yellow (2.5Y 8/2) silt coats on faces of peds; slightly effervescent; moderately alkaline.

#### Range in Characteristics

Depth to carbonates: 21 to 28 inches

Ap horizon:

Hue—10YR

Value-2 or 3

Chroma—1 or 2

Texture—loam or loamy fine sand

E horizon:

Hue—10YR

Value—4 or 5

Chroma—1 or 2

Texture—fine sand, loamy fine sand, or fine sandy loam

Bt horizon:

Hue—10YR or 2.5Y

Value—4

Chroma—3 or 4

Texture—clay, silty clay, or silty clay loam

Bk horizon:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—2

Texture—silty clay, clay, or clay stratified with silt loam

C horizon:

Hue-2.5Y or 5Y

Value—4 to 6

Chroma—2

Texture—silty clay, clay, silty clay loam, or clay stratified with silty clay loam and silt loam Content of rock fragments—0 to 1 percent

## 133—Dalbo loam, 0 to 3 percent slopes

## Component Descriptions

## Dalbo and similar soils

Extent: 85 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent Texture of the surface laver: Loam

Depth to restrictive feature: Very deep (more than 60

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7

feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 9.7

Content of organic matter in the upper 10 inches: 3.0

percent

#### Mustinka and similar soils

Extent: 10 percent of the unit

Geomorphic description: Flats on lake plains; swales

on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Clay loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (April)

Wet soil moisture status is lowest (depth, months): 3.0 feet (August)

Ponding does not occur (months): January, February, March, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, November)

Available water capacity to a depth of 60 inches: 10.3 inches

Content of organic matter in the upper 10 inches: 7.1 percent

#### Moranville and similar soils

Extent: 5 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 4 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 7.7 inches

Content of organic matter in the upper 10 inches: 1.1 percent

#### Management

Major uses: Cropland, hayland, and forest land

For general and detailed information about managing this map unit, see the following sections:

- · "Agronomy" section
- "Forest Land" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

### **Deerwood Series**

Drainage class: Very poorly drained Permeability: Upper part—moderately rapid; lower part—rapid Landform: Lake plains

Parent material: Organic materials over

glaciolacustrine deposits Slope range: 0 to 1 percent

Taxonomic classification: Sandy, mixed, frigid Histic

Humaquepts

# Typical Pedon

Deerwood muck, 0 to 1 percent slopes, 700 feet south and 200 feet west of the northeast corner of sec. 24, T. 162 N., R. 38 W.

Oap—0 to 14 inches; muck, black (N 2/0) broken face and rubbed; about 20 percent fiber, 10 percent rubbed; weak fine subangular blocky structure; very friable; many very fine and fine roots; slightly acid; abrupt smooth boundary.

A—14 to 16 inches; black (N 2/0) fine sandy loam; weak medium subangular blocky structure; very friable; common very fine roots; neutral; clear smooth boundary.

Cg1—16 to 19 inches; dark grayish brown (2.5Y 4/2) sand; common medium faint very dark grayish brown (2.5Y 3/2) iron depletions and few fine distinct olive brown (2.5Y 4/4) iron concentrations; single grain; loose; slightly effervescent; slightly alkaline; clear wavy boundary.

Cg2—19 to 65 inches; grayish brown (2.5Y 5/2), stratified fine sand and loamy fine sand; common medium distinct light olive brown (2.5Y 5/6) iron concentrations and few fine faint dark grayish brown (2.5Y 4/2) iron depletions: single grain; loose; strongly effervescent; moderately alkaline; gradual wavy boundary.

Cg3—65 to 80 inches; grayish brown (2.5Y 5/2), stratified fine sand and loamy fine sand; few fine prominent dark yellowish brown (10YR 4/6) iron concentrations and common medium distinct gray (5Y 5/1) iron depletions; single grain; loose; strongly effervescent; moderately alkaline.

### Range in Characteristics

Thickness of the organic material: 8 to 16 inches

Oap or Oa horizon:

Hue-7.5YR, 10YR, or N

Value—2 or 3

Chroma-0 to 2

Texture—muck

#### A horizon:

Hue-10YR, 2.5YR, 5Y, or N

Value—2 or 3

Chroma—0 or 1

Texture—loamy sand, loamy fine sand, fine sandy loam, or the mucky analogs of these textures

Content of rock fragments—0 to 5 percent

Cg horizon:

Hue—2.5Y or 5Y Value—4 to 6

Chroma-1 or 2

Texture—loamy fine sand, fine sand, sand, or coarse sand

Content of rock fragments—0 to 35 percent

# 547—Deerwood muck, 0 to 1 percent slopes

## Component Descriptions

#### Deerwood and similar soils

Extent: 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over

glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 8.1 inches

Content of organic matter in the upper 10 inches: 70.0 percent

### Markey and similar soils

Extent: 4 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over

glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May, June)

Wet soil moisture status is lowest (depth, months): 2.1 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (January, February, July, August, September, October, November, December)

Ponding is deepest (depth, months): 0.5 foot (March, April, May, June)

Available water capacity to a depth of 60 inches: 17.9 inches

Content of organic matter in the upper 10 inches: 70.0 percent

## Rosewood and similar soils

Extent: 3 percent of the unit

Geomorphic description: Flats on lake plains; swales

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.9 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 5.7 inches

Content of organic matter in the upper 10 inches: 5.5 percent

### Syrene and similar soils

Extent: 3 percent of the unit

Geomorphic description: Flats on beach plains; swales

on beach plains

Slope range: 0 to 2 percent

Texture of the surface layer: Sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.3 foot (April)

Wet soil moisture status is lowest (depth, months): 3.3 feet (February, August)

Ponding does not occur (months): January, February, March, July, August, September, October, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 4.3 inches

Content of organic matter in the upper 10 inches: 5.5 percent

# Management

Major uses: Wildlife habitat and pasture

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

#### Dora Series

Drainage class: Very poorly drained

Permeability: Upper part—moderate or moderately

rapid; lower part—very slow

Landform: Lake plains

Parent material: Organic materials over

glaciolacustrine deposits Slope range: 0 to 1 percent

Taxonomic classification: Clayey, smectitic, euic, frigid

Terric Haplosaprists

### Typical Pedon

Dora muck, 2,400 feet south and 100 feet west of the northeast corner of sec. 19, T. 163 N., R. 38 W.

- Oa1—0 to 5 inches; muck, black (5YR 2.5/1) broken face and rubbed; about 10 percent fiber, 2 percent rubbed; weak fine and very fine subangular blocky structure; very friable; many fine and very fine roots; neutral; gradual smooth boundary.
- Oa2—5 to 17 inches; muck, dark reddish brown (5YR 2.5/2) broken face and rubbed; about 15 percent fiber, 5 percent rubbed; weak thin and very thin platy structure; very friable; many very fine roots; slightly acid; gradual wavy boundary.
- Oa3—17 to 31 inches; muck, black (5YR 2.5/1) broken face and rubbed; about 10 percent fiber, 5 percent rubbed; weak thin and very thin platy structure; very friable; many very fine and few medium roots; slightly acid; clear wavy boundary.
- A—31 to 33 inches; black (N 2/0) silty clay; moderate fine and very fine subangular blocky structure;

firm; few fine roots; common fine distinct dark brown (7.5YR 3/2) organic stains on faces of peds; slightly acid; clear wavy boundary.

- Cg1—33 to 41 inches; dark olive gray (5Y 3/2) silty clay; few fine distinct dark yellowish brown (10YR 3/4) and common medium distinct olive (5Y 5/3) iron concentrations; massive; firm; common fine distinct light gray (5Y 7/1) soft masses of lime between peds; strongly effervescent; slightly alkaline; clear wavy boundary.
- Cg2—41 to 63 inches; dark olive gray (5Y 3/2) clay; common medium distinct dark yellowish brown (10YR 3/4) iron concentrations; massive; firm; slightly effervescent; slightly alkaline; clear wavy boundary.
- Cg3—63 to 80 inches; dark olive gray (5Y 3/2) clay stratified with bands of light gray or gray (5Y 6/1) silt loam <sup>1</sup>/<sub>16</sub> to <sup>1</sup>/<sub>8</sub> inch thick; few fine distinct olive (5Y 5/3) iron concentrations; massive; very firm; slightly effervescent; slightly alkaline.

## Range in Characteristics

Depth to carbonates: 33 to 57 inches

Thickness of the organic material: 16 to 51 inches

Oa horizon:

Hue—10YR, 7.5YR, 5YR, or N

Value—2 or 3

Chroma-0 to 2

Texture—muck

Content of wood fragments—0 to 15 percent

A horizon:

Hue-10YR, 2.5Y, or N

Value—2 or 3

Chroma—0 or 1

Texture—silty clay loam, silty clay, silt loam, or the mucky analogs of these textures

Cg horizon:

Hue-2.5Y or 5Y

Value—3 to 6

Chroma—1 or 2

Texture—clay, silty clay, silty clay loam, or clay stratified with silty clay loam or silt loam

### 550—Dora muck, 0 to 1 percent slopes

#### Component Descriptions

#### Dora and similar soils

Extent: 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained Parent material: Organic materials over

glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May, June)

Wet soil moisture status is lowest (depth, months): 2.1 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (January, February, July, August, September, October, November, December)

Ponding is deepest (depth, months): 0.5 foot (March, April, May, June)

Available water capacity to a depth of 60 inches: 18.3 inches

Content of organic matter in the upper 10 inches: 55.5 percent

#### Boash and similar soils

Extent: 4 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Clay loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Floodina: None

Wet soil moisture status is highest (depth, months): At the surface (April)

Wet soil moisture status is lowest (depth, months): 3.0 feet (August)

Ponding does not occur (months): January, February, March, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, November)

Available water capacity to a depth of 60 inches: 9.6 inches

Content of organic matter in the upper 10 inches: 4.3 percent

## Seelyeville and similar soils

Extent: 3 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 1.6 feet (February, August)

Ponding is shallowest (depth, months): 0.3 foot (January, February, July, August, September, October, November, December)

Ponding is deepest (depth, months): 0.5 foot (March, April, May, June)

Available water capacity to a depth of 60 inches: 23.9 inches

Content of organic matter in the upper 10 inches: 62.0 percent

#### Woodslake and similar soils

Extent: 3 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Clay

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 1.6 feet (February, August)

Ponding depth: 0.5 foot all year

Available water capacity to a depth of 60 inches: 7.9 inches

Content of organic matter in the upper 10 inches: 3.4 percent

## Management

Major uses: Wildlife habitat and pasture

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

# 1187—Dora muck, ponded, 0 to 1 percent slopes

### Component Descriptions

### Dora, ponded, and similar soils

Extent: 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over

glaciolacustrine deposits

Flooding: None

Wet soil moisture status: At the surface all year

Ponding depth: 1.0 foot all year

Available water capacity to a depth of 60 inches: 12.8

inches

Content of organic matter in the upper 10 inches: 62.0

percent

#### Seelyeville, ponded, and similar soils

Extent: 4 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials

Flooding: None

Wet soil moisture status: At the surface all year

Ponding depth: 1.0 foot all year

Available water capacity to a depth of 60 inches: 23.9

inches

Content of organic matter in the upper 10 inches: 62.0

percent

#### Wildwood and similar soils

Extent: 4 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 5.7 inches

Content of organic matter in the upper 10 inches: 62.0 percent

#### Boash and similar soils

Extent: 2 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Clay loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): At

the surface (April)

Wet soil moisture status is lowest (depth, months): 3.0

feet (August)

Ponding does not occur (months): January, February,

March, December

Ponding is deepest (depth, months): 0.3 foot (April,

May, June, November)

Available water capacity to a depth of 60 inches: 9.6

inches

Content of organic matter in the upper 10 inches: 4.3

percent

## Management

Major use: Wildlife habitat

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Forest Land" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

# 1333—Dora muck, wooded, 0 to 1 percent slopes

## Component Descriptions

## Dora, wooded, and similar soils

Extent: 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over

glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.2 foot (July, August, September)

Ponding is deepest (depth, months): 0.3 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 16.8 inches

Content of organic matter in the upper 10 inches: 55.5 percent

#### Lupton and similar soils

Extent: 4 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained Parent material: Organic materials

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 1.6 feet (February, August)

Ponding is shallowest (depth, months): 0.2 foot (July, August, September)

Ponding is deepest (depth, months): 0.3 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 23.9 inches

Content of organic matter in the upper 10 inches: 80.0 percent

#### Wildwood and similar soils

Extent: 4 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained

Drainage class: Very poorly drained Parent material: Organic materials over

glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 5.7 inches

Content of organic matter in the upper 10 inches: 62.0 percent

#### Auganaush and similar soils

Extent: 2 percent of the unit

Geomorphic description: Flats on lake plains; swales

on lake plains

Slope range: 0 to 2 percent Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (April)

Wet soil moisture status is lowest (depth, months): 3.3 feet (August)

Ponding does not occur (months): January, February, March, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, November)

Available water capacity to a depth of 60 inches: 10.3 inches

Content of organic matter in the upper 10 inches: 3.3 percent

### Management

Major uses: Forest land and wildlife habitat

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Forest Land" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

## **Eckvoll Series**

Drainage class: Moderately well drained

Permeability: Upper part—rapid; lower part—moderate

or moderately slow Landform: Lake plains

Parent material: Glaciolacustrine deposits over till

Slope range: 0 to 3 percent

Taxonomic classification: Loamy, mixed, superactive, frigid Aquic Arenic Hapludalfs

## Typical Pedon

Eckvoll loamy fine sand, 0 to 3 percent slopes, 150 feet south and 400 feet east of the northwest corner of sec. 18, T. 159 N., R. 39 W.

- A—0 to 6 inches; black (10YR 2/1) loamy fine sand, gray (10YR 5/1) dry; weak fine subangular blocky structure parting to weak fine granular; very friable; many very fine roots; neutral; abrupt smooth boundary.
- E1—6 to 16 inches; brown (10YR 5/3) fine sand; weak fine subangular blocky structure parting to single grain; very friable; few very fine roots; neutral; clear wavy boundary.
- E2—16 to 21 inches; brown (10YR 5/3) fine sand; few fine faint dark brown (10YR 3/3) iron concentrations; weak fine subangular blocky structure parting to single grain; very friable; few very fine roots; neutral; abrupt wavy boundary.
- 2Bt—21 to 26 inches; brown (10YR 4/3) sandy clay loam; common medium distinct strong brown (7.5YR 4/6) iron concentrations and few fine faint dark grayish brown (10YR 4/2) iron depletions; weak fine subangular blocky structure; friable; few very fine roots; very few distinct discontinuous dark brown (10YR 3/3) clay films on faces of peds and in pores; neutral; abrupt wavy boundary.
- 2Bk—26 to 35 inches; light yellowish brown (2.5Y 6/3) loam; common fine distinct light olive brown (2.5Y 5/6) iron concentrations and common fine faint grayish brown (2.5Y 5/2) iron depletions; weak fine subangular blocky structure; friable; few very fine roots; many fine distinct light gray (10YR 7/2) soft masses of lime throughout; violently effervescent; 2 percent gravel; slightly alkaline; clear wavy boundary.
- 2C—35 to 80 inches; light yellowish brown (2.5Y 6/3) loam; common medium distinct light olive brown (2.5Y 5/6) and few fine prominent yellowish brown (10YR 5/6) iron concentrations and common medium faint grayish brown (2.5Y 5/2) iron depletions; massive; friable; common fine distinct light gray (10YR 7/2) soft masses of lime throughout; strongly effervescent; 2 percent gravel; moderately alkaline.

### Range in Characteristics

Depth to carbonates: 26 to 32 inches

A horizon:

Hue—10YR Value—2 or 3 Chroma—1 or 2

Texture—loamy fine sand

Content of rock fragments—0 to 2 percent

E horizon:

Hue—10YR

Value—4 or 5

Chroma—3 or 4

Texture—fine sand or loamy sand

Content of rock fragments—0 to 2 percent

2Bt horizon:

Hue-10YR or 2.5Y

Value—4 or 5

Chroma-2 to 4

Texture—sandy clay loam or clay loam

Content of rock fragments—2 to 5 percent

2Bk horizon:

Hue-2.5Y

Value—6

Chroma—3

Texture—loam

Content of rock fragments—2 to 10 percent

2C horizon:

Hue-2.5Y

Value—5 or 6

Chroma—2

Texture—sandy loam, fine sandy loam, or loam

Content of rock fragments—2 to 10 percent

# 565—Eckvoll loamy fine sand, 0 to 3 percent slopes

## **Component Descriptions**

## **Eckvoll and similar soils**

Extent: 85 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months):

2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 8.7

inches

Content of organic matter in the upper 10 inches: 1.5 percent

## Chilgren and similar soils

Extent: 5 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Till Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February,

March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 10.4 inches

Content of organic matter in the upper 10 inches: 1.4 percent

## Grygla and similar soils

Extent: 5 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits and till

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.1 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 8.7 inches

Content of organic matter in the upper 10 inches: 1.8 percent

#### Hiwood and similar soils

Extent: 5 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 1 to 6 percent

Texture of the surface layer: Fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (July, August)

Pondina: None

Available water capacity to a depth of 60 inches: 4.7

Content of organic matter in the upper 10 inches: 0.6 percent

## Management

Major uses: Forest land, pasture, and cropland

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Forest Land" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

#### **Enstrom Series**

Drainage class: Moderately well drained

Permeability: Upper part—rapid; lower part—moderate

or moderately slow Landform: Lake plains

Parent material: Glaciolacustrine deposits over till

Slope range: 0 to 3 percent

Taxonomic classification: Sandy over loamy, mixed, superactive, nonacid, frigid Aquic Udorthents

#### Typical Pedon

Enstrom loamy fine sand, 0 to 3 percent slopes, 1,300 feet south and 250 feet east of the northwest corner of sec. 28, T. 160 N., R. 39 W.

Ap—0 to 6 inches; very dark grayish brown (10YR 3/2) loamy fine sand, grayish brown (10YR 5/2) dry; weak fine granular structure; very friable; many very fine and fine roots; slightly alkaline; clear smooth boundary.

Bw1—6 to 14 inches; brown (10YR 5/3) fine sand; common fine distinct dark yellowish brown (10YR 4/6) iron concentrations; single grain; loose; common very fine and fine roots; neutral; gradual wavy boundary.

Bw2—14 to 29 inches; yellowish brown (10YR 5/4) fine sand; common fine distinct dark yellowish

brown (10YR 4/6) iron concentrations; single grain; loose; slightly alkaline; clear wavy boundary.

2C—29 to 80 inches; light brownish gray (2.5Y 6/2) loam; common fine distinct olive yellow (2.5Y 6/6) and common fine prominent yellowish brown (10YR 5/6) iron concentrations and common fine faint light gray (2.5Y 7/2) iron depletions; massive; friable; common fine and medium distinct white (10YR 8/1) soft masses of lime between peds; strongly effervescent; 3 percent gravel; moderately alkaline.

# Range in Characteristics

Depth to carbonates: 20 to 40 inches

Ap or A horizon:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—loamy fine sand

Content of rock fragments—0 to 5 percent

Bw horizon:

Hue-2.5Y or 10YR

Value—4 to 6

Chroma-2 to 4

Texture—sand, fine sand, or loamy fine sand Content of rock fragments—2 to 5 percent

2C horizon:

Hue-5Y, 2.5Y, or 10YR

Value—4 to 6

Chroma—2 or 3

Texture—fine sandy loam, loam, silt loam, silty clay loam, or silt loam stratified with clay Content of rock fragments—2 to 10 percent

# 145—Enstrom loamy fine sand, 0 to 3 percent slopes

## Component Descriptions

## **Enstrom and similar soils**

Extent: 85 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months):

2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 8.1

inches

Content of organic matter in the upper 10 inches: 1.5 percent

## Grygla and similar soils

Extent: 10 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits and till

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.1

feet (August)

Ponding does not occur (months): January, February, March, July, August, September, December

Ponding is deepest (depth, months): 0.3 foot (April,

May)

Available water capacity to a depth of 60 inches: 8.7

inches

Content of organic matter in the upper 10 inches: 1.8

percent

#### Redby and similar soils

Extent: 4 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Somewhat poorly drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

1.5 feet (April)

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet (August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.8

inches

Content of organic matter in the upper 10 inches: 0.6

percent

# Pelan and similar soils

Extent: 1 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Sandy loam

Depth to restrictive feature: Very deep (more than 60

inches

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 7.1 inches

Content of organic matter in the upper 10 inches: 1.4 percent

# Management

Major uses: Pasture, hayland, and forest land

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Forest Land" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

# Epoufette Series

Drainage class: Poorly drained

Permeability: Upper part—moderately rapid; lower

part—very rapid Landform: Beach plains

Parent material: Beach deposits Slope range: 0 to 2 percent

Taxonomic classification: Coarse-loamy, mixed, superactive, frigid Mollic Endoaqualfs

## Typical Pedon

Epoufette loamy fine sand, 3,800 feet south and 3,400 feet east of the northwest corner of sec. 20, T. 158 N., R. 33 W., in Lake of the Woods County, Minnesota:

- Ap—0 to 6 inches; black (10YR 2/1) loamy fine sand, very dark grayish brown (10YR 3/2) dry; weak fine subangular blocky structure; very friable; many fine and medium roots; neutral; abrupt smooth boundary.
- Eg—6 to 10 inches; dark gray (10YR 4/1) fine sand; common fine faint grayish brown (10YR 5/2) iron depletions; moderate fine subangular blocky

structure; very friable; common fine roots; neutral; abrupt smooth boundary.

- Btg—10 to 20 inches; dark grayish brown (10YR 4/2) sandy loam; common fine faint grayish brown (10YR 5/2) iron depletions and common fine distinct dark yellowish brown (10YR 4/6) and dark brown (7.5YR 4/4) iron concentrations; moderate fine and medium subangular blocky structure; friable; common faint discontinuous very dark grayish brown (10YR 3/2) clay films on faces of peds and in pores; 5 percent gravel; neutral; gradual wavy boundary.
- 2Cg1—20 to 28 inches; grayish brown (10YR 5/2) sand; many fine distinct yellowish brown (10YR 5/6) iron concentrations; single grain; loose; 5 percent gravel; slightly alkaline; clear smooth boundary.
- 2Cg2—28 to 37 inches; grayish brown (10YR 5/2) coarse sand; many medium distinct yellowish brown (10YR 5/6) iron concentrations; single grain; loose; 5 percent gravel; slightly alkaline; gradual wavy boundary.
- 2Cg3—37 to 60 inches; grayish brown (2.5Y 5/2) gravelly coarse sand; single grain; loose; 20 percent gravel; slightly effervescent; moderately alkaline.

# Range in Characteristics

Depth to carbonates: 12 to 40 inches

Ap horizon:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—loamy fine sand

Content of rock fragments—0 to 10 percent

Eg horizon:

Hue—10YR

Value—4 or 5

Chroma—1 or 2

Texture—fine sand

Content of rock fragments—0 to 15 percent

Bta horizon:

Hue-10YR or 2.5Y

Value—4 or 5

Chroma—1 or 2

Texture—sandy loam or coarse sandy loam Content of rock fragments—5 to 15 percent

2Cg horizon:

Hue-10YR or 2.5Y

Value—5 or 6

Chroma—1 or 2

Texture—coarse sand or sand Content of rock fragments—5 to 35 percent

# 191—Epoufette loamy fine sand, MAP 22-30, 0 to 2 percent slopes

# **Component Descriptions**

## **Epoufette and similar soils**

Extent: 85 percent of the unit

Geomorphic description: Flats on beach plains; swales

on beach plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.3 foot (April)

Wet soil moisture status is lowest (depth, months): 3.3 feet (February, August)

Ponding does not occur (months): January, February, March, July, August, September, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 2.8 inches

Content of organic matter in the upper 10 inches: 4.0 percent

## Cormant and similar soils

Extent: 5 percent of the unit

Geomorphic description: Flats on lake plains; swales

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.9 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 4.9 inches

Content of organic matter in the upper 10 inches: 3.9 percent

#### Leafriver and similar soils

Extent: 5 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 8.4 inches

Content of organic matter in the upper 10 inches: 70.0 percent

#### Meehan and similar soils

Extent: 5 percent of the unit

Geomorphic description: Rises on lake plains; flats on

lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Somewhat poorly drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 1.5 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.4 inches

Content of organic matter in the upper 10 inches: 1.4 percent

## Management

Major uses: Forest land and pasture

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Forest Land" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

# Espelie Series

Drainage class: Poorly drained

Permeability: Upper part—moderately rapid; lower

part—slow Landform: Lake plains

Parent material: Glaciolacustrine deposits

Slope range: 0 to 2 percent

Taxonomic classification: Sandy over clayey, mixed

over smectitic, frigid Typic Epiaquolls

# Typical Pedon

Espelie fine sandy loam, 0 to 2 percent slopes, 500 feet south and 200 feet west of the northeast corner of sec. 27, T. 160 N., R. 39 W.

Ap—0 to 10 inches; black (10YR 2/1) fine sandy loam, dark gray (10YR 4/1) dry; weak fine subangular blocky structure parting to weak very fine subangular blocky; very friable; few fine roots; slightly alkaline; clear smooth boundary.

Bg1—10 to 16 inches; dark grayish brown (2.5Y 4/2) loamy fine sand; few fine prominent yellowish brown (10YR 5/6) iron concentrations; weak fine subangular blocky structure parting to weak very fine subangular blocky; very friable; slightly alkaline; clear wavy boundary.

Bg2—16 to 27 inches; grayish brown (10YR 5/2) fine sand; few fine distinct olive yellow (2.5Y 6/6) iron concentrations; single grain; loose; slightly alkaline; clear wavy boundary.

2Cg—27 to 80 inches; dark grayish brown (2.5Y 4/2) clay with bands of light brownish gray (2.5Y 6/2) silt loam <sup>1</sup>/<sub>16</sub> to <sup>1</sup>/<sub>4</sub> inch thick; few medium distinct light olive brown (2.5Y 5/6) iron concentrations; weak thin platy soil fragments; firm; many medium distinct white (10YR 8/1) silt coats on faces of peds; strongly effervescent; moderately alkaline.

## Range in Characteristics

Depth to carbonates: 17 to 27 inches

Thickness of the mollic epipedon: 7 to 11 inches

Ap horizon:

Hue—10YR Value—2 or 3 Chroma—1 or 2

Texture—fine sandy loam

Content of rock fragments—0 to 5 percent

#### Ba horizon:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—2

Texture—loamy fine sand or fine sand Content of rock fragments—0 to 10 percent

# 2Cg horizon:

Hue-2.5Y or 5Y

Value—4 to 6

Chroma—1 or 2

Texture—clay, silty clay, or clay stratified with silt

loam or very fine sandy loam

Content of rock fragments—0 to 5 percent

# 645—Espelie fine sandy loam, 0 to 2 percent slopes

# Component Descriptions

## Espelie and similar soils

Extent: 85 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8

feet (August)

Ponding does not occur (months): January, February,

March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April,

May, June)

Available water capacity to a depth of 60 inches: 7.7

inches

Content of organic matter in the upper 10 inches: 3.0 percent

#### Grano and similar soils

Extent: 5 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 2 percent
Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (April)

Wet soil moisture status is lowest (depth, months): 3.0 feet (August)

Ponding does not occur (months): January, February, March, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, November)

Available water capacity to a depth of 60 inches: 9.7 inches

Content of organic matter in the upper 10 inches: 3.5 percent

## Hilaire and similar soils

Extent: 5 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 8.0

Content of organic matter in the upper 10 inches: 3.0 percent

#### Wildwood and similar soils

Extent: 5 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 5.7 inches

Content of organic matter in the upper 10 inches: 62.0 percent

# Management

Major use: Cropland

For general and detailed information about managing this map unit, see the following sections:

"Agronomy" section

"Forest Land" section

"Recreation" section

"Wildlife Habitat" section

"Engineering" and "Soil Properties" sections

## Faunce Series

Drainage class: Well drained

Permeability: Rapid Landform: Beach ridges Parent material: Beach deposits

Slope range: 0 to 3 percent

Taxonomic classification: Mixed, frigid Argic

Udipsamments

## Typical Pedon

Faunce loamy fine sand, 0 to 3 percent slopes, 1,150 feet north and 1,650 feet west of the southeast corner of sec. 25, T. 161 N., R. 35 W.

Ap—0 to 2 inches; black (10YR 2/1) loamy fine sand, very dark gray (10YR 3/1) dry; weak fine subangular blocky structure; very friable; common very fine to medium roots; slightly acid; abrupt smooth boundary.

E1-2 to 4 inches; dark brown (10YR 3/3) loamy fine sand; weak fine subangular blocky structure; very friable; common very fine to medium roots; slightly acid; clear wavy boundary.

E2—4 to 14 inches; strong brown (7.5YR 4/6) loamy sand; weak fine subangular blocky structure; very friable; few very fine roots; 5 percent gravel; slightly acid; clear wavy boundary.

E&Bt—14 to 24 inches; brown (10YR 4/3) gravelly coarse sand (E); common fine distinct dark yellowish brown (10YR 4/6) iron concentrations; single grain; loose; few very fine roots; 15 percent

gravel; neutral; few irregular and discontinuous lamellae of dark brown (7.5YR 3/4) sandy clay loam ½ to 1 inch thick (Bt); common fine distinct strong brown (7.5YR 4/6) iron concentrations; weak fine subangular blocky structure; friable; very few distinct discontinuous dark brown (7.5YR 3/3) clay films on faces of peds and in pores; 12 percent gravel; neutral; clear wavy boundary.

C1—24 to 54 inches; brown (10YR 5/3) sand; single grain; loose; slightly effervescent; 10 percent gravel; neutral; clear wavy boundary.

C2—54 to 67 inches; brown (10YR 5/3) fine sand; single grain; loose; slightly effervescent; slightly alkaline; clear wavy boundary.

C3—67 to 80 inches; brown (10YR 5/3) sand; single grain; loose; slightly effervescent; 8 percent gravel; slightly alkaline.

# Range in Characteristics

Depth to carbonates: 23 to 35 inches

A or Ap horizon:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—loamy fine sand

Content of rock fragments—0 to 15 percent

E horizon:

Hue-10YR or 7.5YR

Value—3 to 5

Chroma—3 to 6

Texture—loamy fine sand, loamy sand, fine sand, or sand

Content of rock fragments—5 to 15 percent

E part of E&Bt horizon:

Hue-10YR or 7.5YR

Value—3 to 5

Chroma-3 to 6

Texture—loamy fine sand, loamy sand, fine sand, or sand

Bt part of E&Bt horizon:

Hue-10YR or 7.5YR

Value—3 or 4

Chroma-4 to 6

Texture—sandy loam, loamy coarse sand, or sandy clay loam

Content of rock fragments—0 to 35 percent

C horizon:

Hue—10YR

Value—5 to 7

Chroma-3 or 4

Texture—sand, coarse sand, or fine sand Content of rock fragments—0 to 35 percent

# 570—Faunce loamy fine sand, 0 to 3 percent slopes

# Component Descriptions

## Faunce and similar soils

Extent: 85 percent of the unit

Geomorphic description: Beach ridges Position on the landform: Shoulders, summits

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Well drained Parent material: Beach deposits

Flooding: None

Depth to wet soil moisture status: More than 6.7 feet

all year Ponding: None

Available water capacity to a depth of 60 inches: 3.6

inches

Content of organic matter in the upper 10 inches: 0.5

percent

## Clearriver and similar soils

Extent: 7 percent of the unit

Geomorphic description: Beach ridges

Position on the landform: Shoulders, backslopes

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained

Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

3.0 feet (April)

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet (July, August)

Ponding: None

Available water capacity to a depth of 60 inches: 3.5

inches

Content of organic matter in the upper 10 inches: 0.5

percent

#### Zimmerman and similar soils

Extent: 4 percent of the unit

Geomorphic description: Beach ridges

Position on the landform: Shoulders, summits

Slope range: 1 to 6 percent

Texture of the surface layer: Fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Excessively drained Parent material: Beach deposits

Flooding: None

Depth to wet soil moisture status: More than 6.7 feet

all year Ponding: None

Available water capacity to a depth of 60 inches: 4.8

inches

Content of organic matter in the upper 10 inches: 0.6

percent

#### Meehan and similar soils

Extent: 3 percent of the unit

Geomorphic description: Flats on lake plains; rises on

lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Somewhat poorly drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

1.5 feet (April)

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet (August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.4

inches

Content of organic matter in the upper 10 inches: 1.4

percent

# Pits, gravel

Extent: 1 percent of the unit Slope range: 1 to 50 percent

Definition: Areas from which sand and gravel have

been removed

## Management

Major uses: Forest land and pasture

For general and detailed information about managing this map unit, see the following sections:

- · "Agronomy" section
- "Forest Land" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

# 1002—Fluvaquents, 0 to 2 percent slopes, frequently flooded

# Component Descriptions

# Fluvaquents, frequently flooded, and similar soils

Extent: 90 percent of the unit

Geomorphic description: Swales on flood plains; flats

on flood plains

Slope range: 0 to 2 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained

Parent material: Alluvium

Flooding does not occur (months): January, February

December

Flooding is most likely (frequency, months): Very

frequent (April, May)

Wet soil moisture status is highest (depth, months): At

the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 1.6

feet (February, August)

Ponding is shallowest (depth, months): 0.5 foot (January, February, March, June, July, August,

September, October, November, December)

Ponding is deepest (depth, months): 0.7 foot (April,

May

Available water capacity to a depth of 60 inches: 6.9

inches

Content of organic matter in the upper 10 inches: 6.5

percent

## Seelyeville and similar soils

Extent: 6 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials

Flooding: None

Wet soil moisture status: At the surface all year

Ponding depth: 1.0 foot all year

Available water capacity to a depth of 60 inches: 23.9

inches

Content of organic matter in the upper 10 inches: 62.0 percent

# Hapludalfs and similar soils

Extent: 2 percent of the unit

Geomorphic description: Escarpments

Position on the landform: Shoulders, backslopes

Slope range: 3 to 60 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits and till

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 10.1

Content of organic matter in the upper 10 inches: 0.9 percent

#### Water

Extent: 2 percent of the unit

Definition: Naturally occurring basins of surface water

## Management

Major uses: Wildlife habitat and pasture

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Forest Land" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

# 1067—Fluvaquents, frequently flooded-Hapludalfs complex, 0 to 60 percent slopes

## Component Descriptions

## Fluvaquents, frequently flooded, and similar soils

Extent: 60 percent of the unit

Geomorphic description: Flats on flood plains; swales

on flood plains

Slope range: 0 to 2 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained

Parent material: Alluvium

Flooding does not occur (months): January, February,

December

Flooding is most likely (frequency, months): Very frequent (April, May)

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 1.6 feet (February, August)

Ponding is shallowest (depth, months): 0.5 foot (January, February, March, June, July, August, September, October, November, December)

Ponding is deepest (depth, months): 0.7 foot (April, May)

Available water capacity to a depth of 60 inches: 7.0 inches

Content of organic matter in the upper 10 inches: 6.5 percent

# Hapludalfs and similar soils

Extent: 30 percent of the unit

Geomorphic description: Escarpments

Position on the landform: Shoulders, backslopes

Slope range: 3 to 60 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits and till

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 10.1 inches

Content of organic matter in the upper 10 inches: 0.9 percent

# Seelyeville and similar soils

Extent: 5 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained Parent material: Organic materials

Flooding: None

Wet soil moisture status: At the surface all year

Ponding depth: 1.0 foot all year

Available water capacity to a depth of 60 inches: 23.9 inches

Content of organic matter in the upper 10 inches: 62.0 percent

# Water

Extent: 5 percent of the unit

Definition: Naturally occurring basins of surface water

## Management

Major uses: Wildlife habitat and pasture

For general and detailed information about managing this map unit, see the following sections:

- · "Agronomy" section
- "Forest Land" section
- · "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

#### Foldahl Series

Drainage class: Moderately well drained

Permeability: Upper part—rapid; lower part—moderate

or moderately slow Landform: Lake plains

Parent material: Glaciolacustrine deposits over till

Slope range: 0 to 3 percent

Taxonomic classification: Sandy over loamy, mixed, superactive, frigid Oxyaquic Hapludolls

## Typical Pedon

Foldahl loamy fine sand (fig. 4), 120 feet north and 510 feet west of the southeast corner of sec. 15, T. 147 N., R. 45 W., in Polk County, Minnesota:

- Ap—0 to 9 inches; black (10YR 2/1) loamy fine sand, very dark gray (10YR 3/1) dry; weak medium subangular blocky structure parting to weak fine granular; very friable; few fine roots; neutral; abrupt smooth boundary.
- A—9 to 12 inches; very dark brown (10YR 2/2) loamy fine sand; weak fine subangular blocky structure; very friable; neutral; few fine roots; gradual wavy boundary.
- Bw1—12 to 22 inches; dark brown (10YR 3/3) fine sand; weak fine subangular blocky structure; very friable; neutral; clear wavy boundary.
- Bw2—22 to 30 inches; dark brown (10YR 4/3) fine sand; few fine distinct yellowish brown (10YR 5/6) redoximorphic concentrations and few fine faint grayish brown (10YR 5/2) redoximorphic depletions; single grain; loose; neutral; gradual wavy boundary.
- 2C1—30 to 44 inches; light brownish gray (2.5Y 6/2) fine sandy loam; few fine distinct olive brown (2.5Y 4/4) redoximorphic concentrations; massive; friable; 8 percent gravel; strongly effervescent; moderately alkaline; gradual wavy boundary.
- 2C2—44 to 58 inches; grayish brown (2.5Y 5/2) fine sandy loam; common fine distinct light olive brown

- (2.5Y 5/4) redoximorphic concentrations; weak thin platy soil fragments; friable; 8 percent gravel; slightly effervescent; moderately alkaline; clear wavy boundary.
- 2C3—58 to 70 inches; grayish brown (2.5Y 5/2) fine sandy loam; common medium prominent brownish yellow (10YR 6/6) redoximorphic concentrations; weak thin platy soil fragments; firm; 5 percent gravel; common fine irregularly shaped white (10YR 8/1) masses of carbonate; slightly effervescent; moderately alkaline; clear wavy boundary.
- 2C4—70 to 80 inches; light olive brown (2.5Y 5/3) fine sandy loam; common medium prominent brownish yellow (10YR 6/6) and few fine prominent yellowish brown (10YR 5/6) redoximorphic concentrations; weak thin platy soil fragments; firm; 6 percent gravel; few fine irregularly shaped white (10YR 8/1) masses of carbonate and few fine black (10YR 2/1) manganese stains; slightly effervescent; moderately alkaline.

## Range in Characteristics

Depth to carbonates: 16 to 32 inches

Thickness of the mollic epipedon: 7 to 12 inches

Ap or A horizon:

Hue—10YR

Value—2

Chroma—1 or 2

Texture—fine sandy loam or loamy fine sand Content of rock fragments—0 to 5 percent

Bw horizon:

Hue—10YR

Value—3 or 4

Chroma-2 to 4

Texture—sand, fine sand, or loamy fine sand Content of rock fragments—0 to 5 percent

2C horizon:

Hue-10YR or 2.5Y

Value—5 to 7

Chroma—2 to 4

Texture—silt loam, loam, or fine sandy loam Content of rock fragments—5 to 15 percent

# 1302—Foldahl fine sandy loam, 0 to 3 percent slopes

#### Component Descriptions

# Foldahl and similar soils

Extent: 85 percent of the unit Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 8.8

inches

Content of organic matter in the upper 10 inches: 3.5 percent

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## Kratka and similar soils

Extent: 10 percent of the unit

Geomorphic description: Flats on lake plains; swales

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.1

feet (August)

Ponding does not occur (months): January, February, March, July, August, September, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 8.2 inches

Content of organic matter in the upper 10 inches: 2.9 percent

## Foxhome and similar soils

Extent: 5 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 8.3

inches

Content of organic matter in the upper 10 inches: 5.0 percent

## Management

Major uses: Cropland and hayland

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- · "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

## Foxhome Series

Drainage class: Moderately well drained

Permeability: Upper part—moderately rapid; lower

part—moderate Landform: Lake plains

Parent material: Glaciolacustrine deposits over till

Slope range: 0 to 3 percent

Taxonomic classification: Sandy-skeletal over loamy, mixed, superactive, frigid Oxyaquic Hapludolls

# Typical Pedon

Foxhome sandy loam, 600 feet north and 600 feet west of the southeast corner of sec. 30, T. 148 N., R. 44 W., in Polk County, Minnesota:

Ap—0 to 10 inches; black (10YR 2/1) sandy loam, very dark gray (10YR 3/1) dry; weak fine subangular blocky structure parting to weak fine granular; very friable; few very fine roots; 2 percent gravel; neutral; clear wavy boundary.

Bw1—10 to 15 inches; dark brown (10YR 3/3) loamy sand; weak fine subangular blocky structure parting to weak fine granular; very friable; few fine roots; 5 percent gravel; neutral; abrupt wavy boundary.

2Bw2—15 to 23 inches; brown (10YR 5/3) very gravelly coarse sand; single grain; loose; 40 percent gravel; slightly alkaline; abrupt smooth boundary.

3C1—23 to 54 inches; light brownish gray (2.5Y 6/2) fine sandy loam; common fine prominent yellowish brown (10YR 5/6) redoximorphic concentrations; massive; friable; 2 percent gravel; strongly effervescent; slightly alkaline; clear smooth boundary.

3C2—54 to 69 inches; light yellowish brown (2.5Y 6/3) fine sandy loam; common medium prominent brownish yellow (10YR 6/6) redoximorphic concentrations; weak or moderate fine or medium subangular blocky soil fragments; friable; 2 percent gravel; common fine irregularly shaped light gray (10YR 7/2) masses of carbonate; strongly effervescent; slightly alkaline; clear smooth boundary.

3C3—69 to 80 inches; light yellowish brown (2.5Y 6/3) fine sandy loam; common fine and medium prominent brownish yellow (10YR 6/6) redoximorphic concentrations; moderate medium subangular blocky soil fragments; firm; 2 percent gravel; common fine irregularly shaped light gray (10YR 7/2) masses of carbonate; strongly effervescent; moderately alkaline.

# Range in Characteristics

Depth to carbonates: 11 to 30 inches

Thickness of the mollic epipedon: 8 to 16 inches

Ap or A horizon:

Hue-10YR

Value—2

Chroma—1 or 2

Texture—sandy loam

Content of rock fragments—0 to 15 percent

Bw horizon:

Value-3 or 4

Chroma-2 or 3

Texture—loamy sand, sandy loam, or loam

Content of rock fragments—0 to 15 percent gravel

2Bw horizon:

Hue-2.5Y or 10YR

Value—4 to 6

Chroma-2 to 4

Texture—coarse sand or loamy coarse sand Content of rock fragments—35 to 75 percent

3C horizon:

Hue-2.5Y or 5Y

Value—5 or 6

Chroma—2 or 3

Texture—loam, fine sandy loam, or silt loam Content of rock fragments—2 to 10 percent

# 65—Foxhome sandy loam, 0 to 3 percent slopes

# **Component Descriptions**

# Foxhome and similar soils

Extent: 85 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months):

2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7

feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 8.3

inches

Content of organic matter in the upper 10 inches: 5.0

percent

## Strandquist and similar soils

Extent: 12 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.1

feet (August)

Ponding does not occur (months): January, February,

March, July, August, September, November,

December

Ponding is deepest (depth, months): 0.3 foot (April,

May, June, October)

Available water capacity to a depth of 60 inches: 6.3

inches

Content of organic matter in the upper 10 inches: 3.6

percent

## Skagen and similar soils

Extent: 3 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained

Parent material: Till Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 9.2 inches

Content of organic matter in the upper 10 inches: 6.1 percent

# Management

Major uses: Cropland; hayland and pasture

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

#### Garnes Series

Drainage class: Moderately well drained

Permeability: Moderate Landform: Lake plains

Parent material: Glaciolacustrine deposits and till

Slope range: 0 to 4 percent

Taxonomic classification: Fine-loamy, mixed, superactive, frigid Aquic Hapludalfs

## Typical Pedon

Garnes fine sandy loam (fig. 5), 300 feet south and 1,050 feet west of the northeast corner of sec. 25, T. 162 N., R. 35 W.

- Ap—0 to 6 inches; very dark gray (10YR 3/1) fine sandy loam, light gray (10YR 6/1) dry; weak fine subangular blocky structure parting to weak fine granular; very friable; neutral; abrupt smooth boundary.
- E—6 to 9 inches; brown (10YR 5/3) loamy fine sand; weak thin platy structure parting to weak very fine subangular blocky; very friable; neutral; clear smooth boundary.
- Bt—9 to 14 inches; dark yellowish brown (10YR 4/4) clay loam; moderate medium subangular blocky structure; friable; common distinct brown (10YR 4/3) clay films on faces of peds; 2 percent gravel; slightly alkaline; clear smooth boundary.
- Bk1—14 to 34 inches; brown (10YR 5/3) fine sandy loam; few fine faint grayish brown (10YR 5/2) iron depletions; weak medium platy structure; friable; many fine distinct white (10YR 8/1) soft masses of lime on faces of peds and between peds; 3

percent gravel; violently effervescent; moderately alkaline; gradual smooth boundary.

- Bk2—34 to 72 inches; brown (10YR 5/3) fine sandy loam; common fine faint grayish brown (10YR 5/2) iron depletions and few fine prominent brown (7.5YR 4/4) iron concentrations; weak medium platy structure; friable; common fine distinct white (10YR 8/1) soft masses of lime on faces of peds and between peds; 3 percent gravel; violently effervescent; moderately alkaline; gradual wavy boundary.
- C—72 to 80 inches; brown (10YR 5/3) fine sandy loam; common fine faint grayish brown (10YR 5/2) iron depletions and few fine distinct yellowish brown (10YR 5/6) iron concentrations; massive; friable; 5 percent gravel; strongly effervescent; moderately alkaline.

# Range in Characteristics

Depth to carbonates: 9 to 16 inches

Ap or A horizon:

Hue—10YR Value—2 or 3

Chroma—1 or 2

Texture—fine sandy loam or loam

Content of rock fragments—0 to 10 percent

# E horizon:

Hue—10YR

Value—4 to 6

Chroma—2 or 3

Texture—fine sandy loam, loamy fine sand, or sandy loam

Content of rock fragments—0 to 5 percent

## Bt horizon:

Hue—7.5YR or 10YR

Value—3 or 4

Chroma-2 to 4

Texture—sandy clay loam or clay loam Content of rock fragments—0 to 10 percent

#### Bk horizon:

Hue-10YR or 2.5YR

Value—5 or 6

Chroma-2 to 4

Texture—fine sandy loam, sandy loam, or loam Content of rock fragments—0 to 10 percent

#### C horizon:

Hue-10YR or 2.5Y

Value—5 or 6

Chroma—2 to 4

Texture—loam, fine sandy loam, or sandy loam Content of rock fragments—2 to 15 percent

# 77—Garnes fine sandy loam, 0 to 3 percent slopes

# Component Descriptions

#### Garnes and similar soils

Extent: 85 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits and till

Floodina: None

Wet soil moisture status is highest (depth, months):

2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7

feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 10.2

Content of organic matter in the upper 10 inches: 1.2

percent

## Chilgren and similar soils

Extent: 10 percent of the unit

Geomorphic description: Flats on lake plains; swales

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Till Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8

feet (August)

Ponding does not occur (months): January, February,

March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 10.4

inches

Content of organic matter in the upper 10 inches: 1.4

percent

## **Eckvoll and similar soils**

Extent: 3 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months):

2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7

feet (transitory) (August)

Pondina: None

Available water capacity to a depth of 60 inches: 8.7

Content of organic matter in the upper 10 inches: 1.5

percent

#### Pelan and similar soils

Extent: 2 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months):

2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7

feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 7.1

Content of organic matter in the upper 10 inches: 1.4

percent

# Management

Major uses: Cropland, hayland, and forest land

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Forest Land" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

# 1923B—Garnes loam, 1 to 4 percent slopes, very stony

# **Component Descriptions**

## Garnes, very stony, and similar soils

Extent: 85 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 1 to 4 percent Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits and till

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 10.4

Content of organic matter in the upper 10 inches: 1.1 percent

# Chilgren and similar soils

Extent: 10 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

*Drainage class:* Poorly drained

Parent material: Till Floodina: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February,

March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 10.4

Content of organic matter in the upper 10 inches: 1.4 percent

## **Eckvoll and similar soils**

Extent: 3 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 8.7

Content of organic matter in the upper 10 inches: 1.5

percent

#### Pelan and similar soils

Extent: 2 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months):

2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7

feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 7.1

inches

Content of organic matter in the upper 10 inches: 1.4

percent

# Management

Major uses: Forest land and pasture

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Forest Land" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

# Glyndon Series

Drainage class: Moderately well drained

Permeability: Upper part—moderate; lower part—

moderate or moderately rapid

Landform: Lake plains

Parent material: Glaciolacustrine deposits

Slope range: 0 to 2 percent

Taxonomic classification: Coarse-silty, mixed, superactive, frigid Aeric Calciaquolls

## Typical Pedon

Glyndon very fine sandy loam (fig. 6), 2,550 feet south and 500 feet west of the northeast corner of sec. 32, T. 161 N., R. 38 W.

- Ap—0 to 8 inches; very dark gray (10YR 3/1) very fine sandy loam, gray (10YR 5/1) dry; weak fine subangular blocky structure; very friable; strongly effervescent; slightly alkaline; abrupt smooth boundary.
- A—8 to 11 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; weak fine subangular blocky structure; very friable; common fine distinct white (10YR 8/1) soft masses of lime on faces of peds; strongly effervescent; slightly alkaline; abrupt smooth boundary.
- Bk1—11 to 17 inches; light yellowish brown (2.5Y 6/3) silt loam; weak medium subangular blocky structure; very friable; violently effervescent; moderately alkaline; clear wavy boundary.
- Bk2—17 to 36 inches; light yellowish brown (2.5Y 6/4) silt loam; few fine prominent light brownish gray (10YR 6/2) iron depletions; weak medium subangular blocky structure; very friable; common fine distinct white (10YR 8/1) soft masses of lime on faces of peds; violently effervescent; moderately alkaline; clear wavy boundary.
- Bk3—36 to 40 inches; light yellowish brown (2.5Y 6/4) silt loam; common fine prominent light brownish gray (10YR 6/2) iron depletions and few fine distinct light olive brown (2.5Y 5/6) iron concentrations; weak medium subangular blocky structure; very friable; common fine distinct white (10YR 8/1) soft masses of lime on faces of peds; strongly effervescent; slightly alkaline; clear wavy boundary.
- Bk4—40 to 56 inches; light yellowish brown (2.5Y 6/3) silt loam; common fine distinct light brownish gray (10YR 6/2) iron depletions and common gray (2.5Y 5/6) iron concentrations; weak medium subangular blocky structure; very friable; common fine distinct white (10YR 8/1) soft masses of lime on faces of peds; strongly effervescent; slightly alkaline; clear wavy boundary.
- C—56 to 80 inches; light yellowish brown (2.5Y 6/3) very fine sandy loam; common fine faint light yellowish brown (10YR 6/4) and common fine prominent yellowish brown (10YR 5/6) iron concentrations and common fine faint light brownish gray (2.5Y 6/2) iron depletions; weak thin and medium platy soil fragments; friable; very few fine prominent black (N 2/0) manganese nodules; strongly effervescent; slightly alkaline.

## Range in Characteristics

Thickness of the mollic epipedon: 7 to 11 inches

Ap or A horizon: Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—very fine sandy loam or silt loam

Bk horizon:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma-2 to 4

Texture—loamy very fine sand, very fine sandy loam, or silt loam

C horizon:

Hue-10YR or 2.5Y

Value—5 or 6

Chroma-2 to 4

Texture—very fine sand, very fine sandy loam, or silt loam

# 1304—Glyndon very fine sandy loam, 0 to 2 percent slopes

## Component Descriptions

# Glyndon and similar soils

Extent: 85 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Very fine sandy loam Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 11.6 inches

Content of organic matter in the upper 10 inches: 5.0 percent

## Borup and similar soils

Extent: 10 percent of the unit

Geomorphic description: Flats on lake plains; swales

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Silt loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June)

Available water capacity to a depth of 60 inches: 11.6 inches

Content of organic matter in the upper 10 inches: 5.2 percent

#### Skime and similar soils

Extent: 5 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 4 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (July, August)

Ponding: None

Available water capacity to a depth of 60 inches: 5.1 inches

Content of organic matter in the upper 10 inches: 0.9 percent

## Management

Major uses: Cropland

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- · "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

#### Grano Series

Drainage class: Poorly drained

Permeability: Slow Landform: Lake plains

Parent material: Glaciolacustrine deposits

Slope range: 0 to 2 percent

Taxonomic classification: Fine, smectitic, frigid Typic

Endoaquerts

## Typical Pedon

Grano clay, 700 feet north and 1,500 feet east of the southwest corner of sec. 23, T. 162 N., R. 38 W.

- Ap—0 to 7 inches; black (N 2/0) clay, very dark gray (N 3/0) dry; weak fine and medium subangular blocky structure; friable; slightly effervescent; slightly alkaline; abrupt smooth boundary.
- A—7 to 13 inches; black (N 2/0) clay, very dark gray (N 3/0) dry; weak medium subangular blocky structure; friable; slightly effervescent; slightly alkaline; clear smooth boundary.
- Bg—13 to 23 inches; dark olive gray (5Y 3/2) clay; weak coarse subangular blocky structure; firm; few distinct discontinuous very dark gray (5Y 3/1) pressure faces on ped exteriors; strongly effervescent; moderately alkaline; clear smooth boundary.
- Cg1—23 to 36 inches; olive gray (5Y 4/2) clay; common fine faint dark gray (5Y 4/1) iron depletions and few fine prominent olive brown (2.5Y 4/4) iron concentrations; massive; firm; strongly effervescent; moderately alkaline; clear wavy boundary.
- Cg2—36 to 54 inches; olive gray (5Y 4/2) silty clay; common medium prominent olive brown (2.5Y 4/4) and few fine prominent dark yellowish brown (10YR 4/6) iron concentrations and common fine faint grayish brown (2.5Y 5/2) iron depletions; massive; firm; few fine distinct white (5Y 8/1) soft masses of lime between peds; strongly effervescent; moderately alkaline; clear wavy boundary.
- Cg3—54 to 80 inches; stratified olive gray (5Y 4/2) clay and light olive gray (5Y 6/2) silt loam; few fine prominent dark yellowish brown (10YR 4/6) iron concentrations and common medium faint gray (5Y 5/1) and common fine faint very dark gray (5Y 3/1) iron depletions; weak thin and medium platy soil fragments; very firm; few fine distinct white (5Y 8/1) soft masses of lime between peds; strongly effervescent; moderately alkaline.

## Range in Characteristics

Thickness of the mollic epipedon: 7 to 16 inches Other features: Some pedons have a Bkg horizon.

Ap horizon:

Hue—10YR or N

Value—2

Chroma—0 or 1 Texture—loam or clay

Bg horizon:

Hue-2.5Y or 5Y

Value—3 to 5

Chroma—1 or 2

Texture—silty clay loam, silty clay, or clay

Cg horizon:

Hue—2.5Y or 5Y Value—4 to 6 Chroma—1 or 2

Texture—silty clay, clay, silty clay loam, or silt loam that has bands of clay

# 1448—Grano clay, MAP 18-22, 0 to 2 percent slopes

# **Component Descriptions**

## Grano and similar soils

Extent: 90 percent of the unit

Geomorphic description: Flats on lake plains; swales

on lake plains

Slope range: 0 to 2 percent Texture of the surface layer: Clay

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (April)

Wet soil moisture status is lowest (depth, months): 3.0 feet (August)

Ponding does not occur (months): January, February, March, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, November)

Available water capacity to a depth of 60 inches: 9.9

Content of organic matter in the upper 10 inches: 4.5 percent

## Percy and similar soils

Extent: 5 percent of the unit

Geomorphic description: Flats on lake plains; swales

on lake plains

Slope range: 0 to 2 percent Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Till Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8

feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 10.1 inches

Content of organic matter in the upper 10 inches: 6.5 percent

## Augsburg and similar soils

Extent: 3 percent of the unit

Geomorphic description: Flats on lake plains; swales

on lake plains

Slope range: 0 to 2 percent Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8

feet (August)

Ponding does not occur (months): January, February,

March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 10.5

inches

Content of organic matter in the upper 10 inches: 4.8 percent

Woodslake and similar soils

Extent: 2 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Clay

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At

the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 1.6

feet (February, August)

Ponding depth: 0.5 foot all year

Available water capacity to a depth of 60 inches: 7.9

inches

Content of organic matter in the upper 10 inches: 3.4 percent

## Management

Major use: Cropland

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

# 1449—Grano loam, MAP 18-22, 0 to 2 percent slopes

# Component Descriptions

## Grano and similar soils

Extent: 90 percent of the unit

Geomorphic description: Flats on lake plains; swales

on lake plains

Slope range: 0 to 2 percent Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At

the surface (April)

Wet soil moisture status is lowest (depth, months): 3.0

feet (August)

Ponding does not occur (months): January, February,

March, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, November)

Available water capacity to a depth of 60 inches: 9.7

Content of organic matter in the upper 10 inches: 3.5

percent

## Percy and similar soils

Extent: 5 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60

Drainage class: Poorly drained

Parent material: Till Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8

feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 10.1 inches

Content of organic matter in the upper 10 inches: 6.5 percent

## Augsburg and similar soils

Extent: 3 percent of the unit

Geomorphic description: Flats on lake plains; swales

on lake plains

Slope range: 0 to 2 percent Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8

feet (August)

Ponding does not occur (months): January, February,

March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 10.5

Content of organic matter in the upper 10 inches: 4.8

percent

#### Woodslake and similar soils

Extent: 2 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Clay

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Glaciolacustrine deposits

Floodina: None

Wet soil moisture status is highest (depth, months): At

the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 1.6 feet (February, August)

Ponding depth: 0.5 foot all year

Available water capacity to a depth of 60 inches: 7.9

Content of organic matter in the upper 10 inches: 3.4 percent

## Management

Major use: Cropland

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- · "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

#### Grimstad Series

Drainage class: Somewhat poorly drained

Permeability: Upper part—moderately rapid; lower

part—moderate Landform: Lake plains

Parent material: Glaciolacustrine deposits over till

Slope range: 0 to 3 percent

Taxonomic classification: Sandy over loamy, mixed,

superactive, frigid Aeric Calciaquolls

# Typical Pedon

Grimstad fine sandy loam, 1,700 feet south and 100 feet east of the northwest corner of sec. 29, T. 159 N., R. 42 W.

- Ap—0 to 10 inches; very dark gray (10YR 3/1) fine sandy loam, dark gray (10YR 4/1) dry; weak fine and medium subangular blocky structure; very friable; strongly effervescent; slightly alkaline; abrupt smooth boundary.
- Bk—10 to 18 inches; dark gray (10YR 4/1) fine sandy loam; weak medium subangular blocky structure; very friable; strongly effervescent; moderately alkaline; clear smooth boundary.
- C1—18 to 24 inches; light brownish gray (2.5Y 6/2) fine sand; few fine distinct light olive brown (2.5Y 5/6) iron concentrations; single grain; loose; strongly effervescent; moderately alkaline; clear wavy boundary.
- C2—24 to 28 inches; light yellowish brown (2.5Y 6/3) fine sand; common fine distinct olive yellow (2.5Y 6/6) iron concentrations; single grain; loose; slightly effervescent; slightly alkaline; clear wavy boundary.
- C3—28 to 30 inches; light yellowish brown (2.5Y 6/3) fine sand; common medium faint light brownish gray (2.5Y 6/2) iron depletions and common medium distinct olive yellow (2.5Y 6/6) iron concentrations; single grain; loose; strongly effervescent; 10 percent gravel; slightly alkaline; clear smooth boundary.
- 2C4—30 to 62 inches; grayish brown (2.5Y 5/2) fine sandy loam; common fine faint dark grayish brown (2.5Y 4/2) iron depletions and common medium prominent yellowish brown (10YR 5/6) iron

concentrations; massive; friable; strongly effervescent; 2 percent gravel and 3 percent cobbles; moderately alkaline; gradual wavy boundary.

2C5—62 to 80 inches; grayish brown (2.5Y 5/2) fine sandy loam; common fine faint dark grayish brown (2.5Y 4/2) iron depletions and many coarse prominent yellowish brown (10YR 5/6) iron concentrations; massive; friable; strongly effervescent; 2 percent gravel and 5 percent cobbles; moderately alkaline.

# Range in Characteristics

Thickness of the mollic epipedon: 7 to 14 inches

Ap or A horizon:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—fine sandy loam

Bk horizon:

Hue-10YR or 2.5Y

Value—4 or 5

Chroma—1 to 3

Texture—fine sandy loam or loamy fine sand

C horizon:

Hue-2.5Y

Value—5 or 6

Chroma—2 to 4

Texture—fine sand or sand

Content of rock fragments—0 to 10 percent

2C horizon:

Hue-10YR or 2.5Y

Value—5 or 6

Chroma—2

Texture—fine sandy loam or loam

Content of rock fragments—0 to 10 percent

# 59—Grimstad fine sandy loam, 0 to 3 percent slopes

## Component Descriptions

## Grimstad and similar soils

Extent: 85 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Somewhat poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): 1.5 feet (April)

Wet soil moisture status is lowest (depth, months):
More than 6.7 feet (August)

Ponding: None

Available water capacity to a depth of 60 inches: 8.3 inches

Content of organic matter in the upper 10 inches: 3.0 percent

#### Strathcona and similar soils

Extent: 12 percent of the unit

Geomorphic description: Flats on lake plains; swales

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.1 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 8.5 inches

Content of organic matter in the upper 10 inches: 4.5 percent

## Foxhome and similar soils

Extent: 3 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 8.3 inches

Content of organic matter in the upper 10 inches: 5.0 percent

# Management

Major uses: Cropland and hayland

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

# Grygla Series

Drainage class: Poorly drained and very poorly drained

Permeability: Upper part—rapid; lower part—moderate or moderately slow

Landform: Lake plains

Parent material: Glaciolacustrine deposits and till

Slope range: 0 to 2 percent

Taxonomic classification: Sandy over loamy, mixed, superactive, nonacid, frigid Mollic Endoaquents

# Typical Pedon

Grygla loamy fine sand, 1,700 feet south and 100 feet east of the northwest corner of sec. 34, T. 159 N., R. 41 W.

- A—0 to 6 inches; black (10YR 2/1) loamy fine sand, dark gray (10YR 4/1) dry; weak fine subangular blocky structure parting to weak very fine subangular blocky; very friable; many fine and very fine roots; neutral; clear smooth boundary.
- Bg—6 to 26 inches; grayish brown (2.5Y 6/2) fine sand; common fine prominent dark yellowish brown (10YR 4/6) iron concentrations; single grain; loose; few fine and very fine roots; 2 percent cobbles; neutral; clear smooth boundary.
- 2BCkg—26 to 42 inches; grayish brown (2.5Y 6/2) loam; many fine distinct dark yellowish brown (10YR 4/6) iron concentrations; weak coarse subangular blocky structure; friable; few fine roots; common fine distinct white (10YR 8/1) soft masses of lime on faces of peds; 5 percent gravel and 2 percent cobbles; strongly effervescent; moderately alkaline; gradual wavy boundary.
- 2Cg—42 to 80 inches; grayish brown (2.5Y 5/2) loam; many fine distinct dark yellowish brown (10YR 4/6) iron concentrations; few fine distinct black (N 2/0) manganese nodules; massive; firm; 10 percent gravel and 2 percent cobbles; strongly effervescent; moderately alkaline.

# Range in Characteristics

Depth to carbonates: 20 to 40 inches

Other features: Some pedons have a Cg horizon. This horizon has colors and textures similar to those of the Bg horizon.

A or Ap horizon:

Hue-10YR

Value-2 or 3

Chroma—1

Texture—loamy fine sand or mucky loamy fine

Content of rock fragments—0 to 2 percent

Bg horizon:

Hue—10YR, 2.5Y, or 5Y

Value—4 to 6

Chroma—1 or 2

Texture—sand, loamy sand, fine sand, or loamy fine sand

Content of rock fragments—0 to 2 percent

2BCkg horizon:

Hue-2.5Y

Value—5 or 6

Chroma—2

Texture—sandy loam, fine sandy loam, or loam Content of rock fragments—3 to 15 percent

2Cg horizon:

Hue—2.5Y

Value—5 to 7

Chroma—2

Texture—sandy loam, fine sandy loam, loam, or silt loam

Content of rock fragments—3 to 15 percent

# 482—Grygla loamy fine sand, 0 to 2 percent slopes

## **Component Descriptions**

# Grygla and similar soils

Extent: 85 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits and till

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.1 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 8.7 inches

Content of organic matter in the upper 10 inches: 1.8 percent

## Chilgren and similar soils

Extent: 5 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Till Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 10.4 inches

Content of organic matter in the upper 10 inches: 1.4 percent

## Grygla, depressional, and similar soils

Extent: 5 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Mucky loamy fine sand Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Glaciolacustrine deposits and till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 3.0 feet (February)

Ponding is shallowest (depth, months): 0.2 foot (July, August, September)

Ponding is deepest (depth, months): 0.3 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 7.8 inches

Content of organic matter in the upper 10 inches: 3.1 percent

#### **Enstrom and similar soils**

Extent: 3 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months):

2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7

feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 8.1

Content of organic matter in the upper 10 inches: 1.5

percent

## Northwood and similar soils

Extent: 2 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits or till

Flooding: None

Wet soil moisture status is highest (depth, months): At

the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5

feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July,

August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October,

November, December)

Available water capacity to a depth of 60 inches: 11.8

Content of organic matter in the upper 10 inches: 67.5

percent

#### Management

Major uses: Forest land, pasture, and cropland

For general and detailed information about managing this map unit, see the following sections:

· "Agronomy" section

"Forest Land" section

- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

# 1401—Grygla mucky loamy fine sand, depressional, 0 to 1 percent slopes

# Component Descriptions

# Grygla, depressional, and similar soils

Extent: 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Mucky loamy fine sand Depth to restrictive feature: Very deep (more than 60

Drainage class: Very poorly drained

Parent material: Glaciolacustrine deposits and till

Flooding: None

Wet soil moisture status is highest (depth, months): At

the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 3.0 feet (February)

Ponding is shallowest (depth, months): 0.2 foot (July, August, September)

Ponding is deepest (depth, months): 0.3 foot (January, February, March, April, May, June, October,

November, December)

Available water capacity to a depth of 60 inches: 7.8

Content of organic matter in the upper 10 inches: 3.1 percent

# Northwood, wooded, and similar soils

Extent: 5 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits or till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.2 foot (July, August, September)

Ponding is deepest (depth, months): 0.3 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 11.9 inches

Content of organic matter in the upper 10 inches: 67.5 percent

## Chilgren and similar soils

Extent: 3 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Till Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8

feet (August)

Ponding does not occur (months): January, February,

March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 10.4 inches

Content of organic matter in the upper 10 inches: 1.4 percent

## Grygla and similar soils

Extent: 2 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits and till

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.1

feet (August)

Ponding does not occur (months): January, February, March, July, August, September, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 8.7 inches

Content of organic matter in the upper 10 inches: 1.8 percent

# Management

Major uses: Forest land and wildlife habitat

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Forest Land" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

# Hangaard Series

Drainage class: Poorly drained

Permeability: Rapid Landform: Beach plains

Parent material: Beach deposits Slope range: 0 to 2 percent

Taxonomic classification: Sandy, mixed, frigid Typic

Endoaquolls

# Typical Pedon

Hangaard sandy loam, 150 feet south and 2,100 feet east of the northwest corner of sec. 7, T. 159 N., R. 40 W

Ap—0 to 12 inches; black (10YR 2/1) sandy loam, very dark gray (10YR 3/1) dry; weak fine subangular blocky structure parting to weak very fine subangular blocky; very friable; many very fine and fine roots; slightly alkaline; clear wavy boundary.

Cg1—12 to 17 inches; light brownish gray (2.5Y 6/2) coarse sand; few medium distinct light olive brown (2.5Y 5/6) and common fine prominent yellowish brown (10YR 5/6) iron concentrations; single grain; loose; common very fine roots; slightly effervescent; 5 percent gravel; slightly alkaline; clear wavy boundary.

Cg2—17 to 25 inches; gray (5Y 6/1) very gravelly coarse sand; few fine prominent yellowish brown (10YR 5/6), common fine prominent yellowish brown (10YR 5/4), and few fine prominent light yellowish brown (2.5Y 6/4) iron concentrations; single grain; loose; common very fine roots; slightly effervescent; 40 percent gravel; slightly alkaline; clear wavy boundary.

Cg3—25 to 46 inches; light olive gray (5Y 6/2) gravelly coarse sand; many fine prominent yellowish brown (10YR 5/4 and 5/6), common fine prominent olive yellow (2.5Y 6/6), and common fine distinct brownish yellow (10YR 6/8) iron concentrations;

single grain; loose; slightly effervescent; 20 percent gravel; slightly alkaline; clear wavy boundary.

- Cg4—46 to 58 inches; gray (5Y 6/1) gravelly coarse sand; common medium prominent light olive brown (2.5Y 5/6) and few fine distinct olive yellow (2.5Y 6/6) iron concentrations; single grain; loose; slightly effervescent; 20 percent mixed gravel; slightly alkaline; clear wavy boundary.
- Cg5—58 to 80 inches; gray (5Y 6/1) gravelly coarse sand; common medium prominent light olive brown (2.5Y 5/6) and few fine prominent olive yellow (2.5Y 6/6) iron concentrations; single grain; loose; slightly effervescent; 25 percent gravel; moderately alkaline.

# Range in Characteristics

Depth to carbonates: 12 to 16 inches

Thickness of the mollic epipedon: 7 to 14 inches

Ap horizon:

Hue-10YR or 2.5Y

Value—2 or 3

Chroma—1 or 2

Texture—sandy loam

Content of rock fragments—0 to 10 percent

Cg horizon:

Hue—2.5Y or 5Y

Value—5 or 6

Chroma—1 or 2

Texture—fine sand, sand, or coarse sand Content of rock fragments—0 to 50 percent

# 111—Hangaard sandy loam, 0 to 2 percent slopes

## Component Descriptions

## Hangaard and similar soils

Extent: 90 percent of the unit

Geomorphic description: Flats on beach plains; swales

on beach plains

Slope range: 0 to 2 percent Texture of the surface layer: Sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

0.3 foot (April)

Wet soil moisture status is lowest (depth, months): 3.3 feet (February, August)

Ponding does not occur (months): January, February, March, July, August, September, October, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 2.9 inches

Content of organic matter in the upper 10 inches: 5.5 percent

#### Deerwood and similar soils

Extent: 5 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 8.1 inches

Content of organic matter in the upper 10 inches: 70.0 percent

## Rushlake and similar soils

Extent: 3 percent of the unit

Geomorphic description: Rises on beach plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained

Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 3.0 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (July, August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.0 inches

Content of organic matter in the upper 10 inches: 1.9 percent

#### Rosewood and similar soils

Extent: 2 percent of the unit

Geomorphic description: Flats on lake plains; swales

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.9 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 5.7 inches

Content of organic matter in the upper 10 inches: 5.5 percent

# Management

Major uses: Cropland and pasture

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Forest Land" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

## Haug Series

Drainage class: Very poorly drained

Permeability: Moderate Landform: Lake plains

Parent material: Organic materials over till

Slope range: 0 to 1 percent

Taxonomic classification: Coarse-loamy, mixed, superactive, calcareous, frigid Histic Humaquepts

## Typical Pedon

Haug muck, 350 feet north and 700 feet east of the southwest corner of sec. 24, T. 161 N., R. 42 W.

Oa—0 to 10 inches; muck, black (10YR 2/1) broken face and rubbed; about 20 percent fiber, 10

percent rubbed; weak thin platy structure; very friable; many very fine and fine roots and few medium roots; neutral; clear wavy boundary.

- A—10 to 16 inches; very dark gray (10YR 3/1) loam; few fine distinct dark yellowish brown (10YR 3/4) iron concentrations; moderate fine subangular blocky structure; friable; common very fine and fine roots; strongly effervescent; slightly alkaline; clear wavy boundary.
- Bg—16 to 28 inches; light gray (5Y 7/2) loam; common fine prominent yellowish brown (10YR 5/6) and few fine prominent brownish yellow (10YR 6/6) iron concentrations; moderate fine subangular blocky structure; friable; few very fine roots; strongly effervescent; 2 percent gravel; slightly alkaline; gradual wavy boundary.
- Cg—28 to 80 inches; light brownish gray (2.5Y 6/2) loam; common medium distinct light olive brown (2.5Y 5/6) and olive yellow (2.5Y 6/6) and few fine distinct yellowish brown (10YR 5/6) iron concentrations; massive; few very fine roots; strongly effervescent; 2 percent gravel; moderately alkaline.

# Range in Characteristics

Depth to carbonates: 9 to 11 inches
Thickness of the organic material: 8 to 16 inches

## Oa horizon:

Hue-7.5YR, 10YR, 2.5Y, or N

Value—2 or 3

Chroma—0 to 2

Texture—muck

## A horizon:

Hue-10YR, 2.5Y, or N

Value—2 or 3

Chroma—0 to 2

Texture—fine sandy loam, loam, silt loam, or the mucky analogs of these textures

Content of rock fragments—2 to 10 percent

## Bg horizon:

Hue—5Y

Value—4 to 7

Chroma—1 or 2

Texture—fine sandy loam, sandy loam, or loam Content of rock fragments—2 to 10 percent

#### Cg horizon:

Hue-2.5Y or 5Y

Value—4 to 6

Chroma—1 or 2

Texture—fine sandy loam, sandy loam, or loam Content of rock fragments—2 to 10 percent

# 187—Haug muck, 0 to 1 percent slopes

# Component Descriptions

## Haug and similar soils

Extent: 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over till

Flooding: None

Wet soil moisture status is highest (depth, months): At

the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 11.8 inches

Content of organic matter in the upper 10 inches: 70.0 percent

# Percy and similar soils

Extent: 5 percent of the unit

Geomorphic description: Flats on lake plains; swales on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Till Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 10.1 inches

Content of organic matter in the upper 10 inches: 6.5 percent

## Cathro and similar soils

Extent: 3 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits or till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May, June)

Wet soil moisture status is lowest (depth, months): 2.1 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (January, February, July, August, September, October, November, December)

Ponding is deepest (depth, months): 0.5 foot (March, April, May, June)

Available water capacity to a depth of 60 inches: 19.8 inches

Content of organic matter in the upper 10 inches: 72.5 percent

#### Boash and similar soils

Extent: 2 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Clay loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (April)

Wet soil moisture status is lowest (depth, months): 3.0 feet (August)

Ponding does not occur (months): January, February, March, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, November)

Available water capacity to a depth of 60 inches: 9.6

Content of organic matter in the upper 10 inches: 4.3 percent

## Management

Major uses: Pasture and wildlife habitat

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- · "Recreation" section

- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

## Hilaire Series

Drainage class: Moderately well drained

Permeability: Upper part—rapid; lower part—slow

Landform: Lake plains

Parent material: Glaciolacustrine deposits

Slope range: 0 to 3 percent

Taxonomic classification: Sandy over clayey, mixed over smectitic, frigid Aquic Hapludolls

# Typical Pedon

Hilaire fine sandy loam, 2,350 feet north and 600 feet east of the southwest corner of sec. 32, T. 162 N., R. 37 W.

- Ap—0 to 7 inches; black (10YR 2/1) fine sandy loam, very dark gray (10YR 3/1) dry; weak fine subangular blocky structure; very friable; few very fine roots; slightly alkaline; abrupt smooth boundary.
- A—7 to 13 inches; black (10YR 2/1) fine sandy loam; weak fine subangular blocky structure; very friable; few very fine roots; common grayish brown (10YR 5/2) and light brownish gray (10YR 6/2) Bw1 material on faces of peds and in pores; slightly alkaline; clear smooth boundary.
- Bw1—13 to 19 inches; light olive brown (2.5Y 5/3) loamy fine sand; few fine distinct dark yellowish brown (10YR 4/6) iron concentrations; weak fine subangular blocky structure; very friable; few very fine roots; slightly alkaline; clear smooth boundary.
- Bw2—19 to 33 inches; brown (10YR 5/3) loamy fine sand; many fine faint grayish brown (10YR 5/2) iron depletions and common fine distinct strong brown (7.5YR 4/6) iron concentrations; weak fine subangular blocky structure; very friable; few very fine roots; slightly effervescent; slightly alkaline; abrupt wavy boundary.
- 2Bk1—33 to 42 inches; stratified dark grayish brown (2.5Y 4/2) clay and light yellowish brown (2.5Y 6/3) silt loam; few fine faint light olive brown (2.5Y 5/6) iron concentrations; moderate medium platy structure parting to weak fine subangular blocky; firm; many fine distinct white (2.5Y 8/2) carbonate coats on faces of peds and in pores; slightly effervescent; moderately alkaline; clear wavy boundary.
- 2Bk2—42 to 80 inches; stratified dark grayish brown (2.5Y 4/2) clay and light yellowish brown (2.5Y 6/3) silt loam; few fine faint light olive brown (2.5Y 5/6) iron concentrations; moderate medium platy

structure parting to weak fine subangular blocky; firm; many fine distinct white (2.5Y 8/2) carbonate coats on faces of peds and in pores; slightly effervescent; moderately alkaline.

# Range in Characteristics

Depth to carbonates: 7 to 35 inches

Thickness of the mollic epipedon: 7 to 13 inches

Ap or A horizon:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—fine sandy loam

Bw horizon:

Hue—2.5Y or 10YR

Value—4 to 6

Chroma—3 or 4

Texture—fine sand or loamy fine sand

2Bk horizon:

Hue—2.5Y or 5Y

Value—4 or 5

Chroma—1 or 2

Texture—clay, silty clay, or clay stratified with silt loam

# 1305—Hilaire fine sandy loam, 0 to 3 percent slopes

## Component Descriptions

#### Hilaire and similar soils

Extent: 85 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 8.0

inches

Content of organic matter in the upper 10 inches: 3.0 percent

## Espelie and similar soils

Extent: 11 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June)

Available water capacity to a depth of 60 inches: 7.7 inches

Content of organic matter in the upper 10 inches: 3.0 percent

#### Grano and similar soils

Extent: 2 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 2 percent Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At

the surface (April)

Wet soil moisture status is lowest (depth, months): 3.0 feet (August)

Ponding does not occur (months): January, February, March, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, November)

Available water capacity to a depth of 60 inches: 9.7 inches

Content of organic matter in the upper 10 inches: 3.5 percent

# Redby and similar soils

Extent: 2 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Somewhat poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

1.5 feet (April)

Wet soil moisture status is lowest (depth, months):
More than 6.7 feet (August)

wore than 6.7 leet (Au

Ponding: None

Available water capacity to a depth of 60 inches: 4.8

inches

Content of organic matter in the upper 10 inches: 0.6 percent

Management

Major uses: Cropland and hayland

For general and detailed information about managing this map unit, see the following sections:

"Agronomy" section

"Forest Land" section

"Recreation" section

• "Wildlife Habitat" section

• "Engineering" and "Soil Properties" sections

## **Hiwood Series**

Drainage class: Moderately well drained

Permeability: Rapid Landform: Lake plains

Parent material: Glaciolacustrine deposits

Slope range: 1 to 6 percent

Taxonomic classification: Mixed, frigid Aquic

Udipsamments

# Typical Pedon

Hiwood fine sand, 300 feet north and 1,100 feet west of the southeast corner of sec. 34, T. 162 N., R. 35 W.

A—0 to 2 inches; black (10YR 2/1) fine sand, dark gray (10YR 4/1) dry; weak fine granular structure parting to single grain; loose, very friable; many fine and few medium roots; strongly acid; clear smooth boundary.

E—2 to 3 inches; brown (10YR 5/3) fine sand, light gray (10YR 7/1) dry; single grain; loose; many fine roots; moderately acid; clear wavy boundary.

Bw1—3 to 12 inches; dark yellowish brown (10YR 4/6) fine sand; single grain; loose; common medium and many fine roots; strongly acid; clear wavy boundary.

Bw2—12 to 22 inches; yellowish brown (10YR 5/4) fine sand; single grain; loose; common medium and fine roots; moderately acid; gradual wavy boundary.

- C1—22 to 34 inches; light yellowish brown (10YR 6/4) fine sand; few fine distinct yellowish brown (10YR 5/6) iron concentrations and few fine distinct light brownish gray (10YR 6/2) iron depletions; single grain; loose; strongly acid; gradual wavy boundary.
- C2—34 to 42 inches; light yellowish brown (10YR 6/4) fine sand; many medium distinct yellowish brown (10YR 5/6) and few fine prominent brown or dark brown (7.5YR 4/4) iron concentrations and common fine prominent light brownish gray (2.5Y 6/2) iron depletions; single grain; loose; strongly acid; clear wavy boundary.
- C3—42 to 55 inches; light brownish gray (2.5Y 6/2) fine sand; common medium distinct yellowish brown (10YR 5/6) and few fine distinct brownish yellow (2.5Y 6/6) iron concentrations; single grain; loose; strongly acid; gradual wavy boundary.
- C4—55 to 80 inches; light brownish gray (2.5Y 6/2) fine sand; many coarse distinct dark yellowish brown (10YR 4/6), common medium prominent yellowish brown (10YR 5/6), and few fine prominent brownish yellow (10YR 6/6) iron concentrations; single grain; loose; moderately acid.

# Range in Characteristics

Depth to carbonates: More than 60 inches

A or Ap horizon:

Hue—10YR

Value-2 or 3

Chroma—1 or 2

Texture—fine sand or loamy fine sand

E horizon:

Hue—10YR

Value—4 to 6

Chroma—1 to 3

Texture—fine sand or loamy fine sand

Bw horizon:

Hue-10YR

Value—4 to 6

Chroma—3 to 6

Texture—fine sand or sand

Content of rock fragments—0 to 2 percent

C horizon:

Hue—10YR or 2.5Y

Value—5 to 7

Chroma-2 to 4

Texture—fine sand or sand

Content of rock fragments—0 to 2 percent

# 48B—Hiwood fine sand, 1 to 6 percent slopes

# Component Descriptions

#### Hiwood and similar soils

Extent: 85 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 1 to 6 percent

Texture of the surface laver: Fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

2.5 feet (April)

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet (July, August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.7

inches

Content of organic matter in the upper 10 inches: 0.6

percent

# Redby and similar soils

Extent: 7 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Somewhat poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

1.5 feet (April)

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet (August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.8

inches

Content of organic matter in the upper 10 inches: 0.6

percent

# Clearriver and similar soils

Extent: 3 percent of the unit

Geomorphic description: Beach ridges

Position on the landform: Shoulders, backslopes

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained

Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 3.0 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (July, August)

Ponding: None

Available water capacity to a depth of 60 inches: 3.5 inches

Content of organic matter in the upper 10 inches: 0.5 percent

## Cormant and similar soils

Extent: 3 percent of the unit

Geomorphic description: Flats on lake plains; swales

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.9 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 4.9 inches

Content of organic matter in the upper 10 inches: 3.9 percent

# Zimmerman and similar soils

Extent: 2 percent of the unit

Geomorphic description: Beach ridges
Position on the landform: Shoulders, summits

Slope range: 1 to 6 percent

Texture of the surface layer: Fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Excessively drained Parent material: Beach deposits

Flooding: None

Depth to wet soil moisture status: More than 6.7 feet

all year Ponding: None

Available water capacity to a depth of 60 inches: 4.8 inches

Content of organic matter in the upper 10 inches: 0.6 percent

# Management

Major uses: Forest land; hayland and pasture

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Forest Land" section
- · "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

## **Huot Series**

Drainage class: Moderately well drained

Permeability: Upper part—moderately rapid; lower

part—slow
Landform: Lake plains

Parent material: Glaciolacustrine deposits

Slope range: 0 to 3 percent

Taxonomic classification: Sandy over clayey, mixed over smectitic, frigid Aquic Calciudolls

# Typical Pedon

Huot fine sandy loam, 2,600 feet north and 1,500 feet west of the southeast corner of sec. 32, T. 151 N., R. 36 W., in Polk County, Minnesota:

- Ap—0 to 10 inches; black (10YR 2/1) fine sandy loam, very dark gray (10YR 3/1) dry; weak medium subangular blocky structure parting to weak fine granular; very friable; few fine roots; very slightly effervescent; slightly alkaline; abrupt smooth boundary.
- Ak—10 to 14 inches; very dark gray (10YR 3/1) fine sandy loam, gray (10YR 5/1) dry; weak medium subangular blocky structure; very friable; few very fine roots; violently effervescent with disseminated lime; moderately alkaline; clear wavy boundary.
- Bk—14 to 26 inches; dark grayish brown (10YR 4/2) loamy fine sand; weak fine subangular blocky structure; very friable; 1 percent gravel; violently effervescent with disseminated lime; moderately alkaline; gradual wavy boundary.
- C1—26 to 34 inches; light olive brown (2.5Y 5/4) fine sand; single grain; loose; common medium distinct grayish brown (2.5Y 5/2) iron depletions; 2 percent gravel and 1 percent cobbles mostly in a lag line at the till contact; slightly effervescent; slightly alkaline; abrupt smooth boundary.
- 2C2—34 to 60 inches; olive gray (5Y 4/2) clay; moderate medium prismatic soil fragments parting

to moderate fine and medium angular blocky; firm; common fine distinct very dark grayish brown (2.5Y 3/2) iron depletions; about 1 percent gravel and 1 percent cobbles; slightly effervescent; slightly alkaline; gradual wavy boundary.

2C3—60 to 80 inches; light brownish gray (2.5Y 6/2) clay; moderate medium angular blocky soil fragments; firm; common medium prominent strong brown (7.5YR 5/8) iron concentrations; about 4 percent gravel and 1 percent cobbles; slightly effervescent; slightly alkaline.

# Range in Characteristics

Thickness of the mollic epipedon: 7 to 14 inches

Ap or A horizon:

Hue-10YR or N

Value—2

Chroma—0 or 1

Texture—fine sandy loam

Bk horizon:

Hue-10YR

Value-4 or 5

Chroma—1 or 2

Texture—fine sandy loam or loamy fine sand

C horizon:

Hue-2.5Y

Value—5 or 6

Chroma—2 to 4

Texture—fine sand or loamy fine sand

Content of rock fragments—0 to 5 percent

2C horizon:

Hue-2.5Y or 5Y

Value—3 to 5

Chroma—2

Texture—clay

# 643—Huot fine sandy loam, 0 to 3 percent slopes

## Component Descriptions

## **Huot and similar soils**

Extent: 85 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 7.9

inches

Content of organic matter in the upper 10 inches: 3.0

percent

#### Thiefriver and similar soils

Extent: 12 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8

feet (August)

Ponding does not occur (months): January, February,

March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April,

May, June)

Available water capacity to a depth of 60 inches: 7.6

inches

Content of organic matter in the upper 10 inches: 3.0

percent

## Redby and similar soils

Extent: 3 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Somewhat poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

1.5 feet (April)

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet (August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.8

inches

Content of organic matter in the upper 10 inches: 0.6

percent

# Management

Major uses: Cropland and hayland

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Forest Land" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

## Karlsruhe Series

Drainage class: Moderately well drained

Permeability: Upper part—moderately rapid; lower

part—rapid

Landform: Beach plains

Parent material: Beach deposits Slope range: 0 to 3 percent

Taxonomic classification: Sandy, mixed, frigid Aeric

Calciaquolls

# Typical Pedon

Karlsruhe sandy loam, 650 feet south and 200 feet west of the northeast corner of sec. 18, T. 162 N., R. 40 W.

- Ap—0 to 8 inches; black (10YR 2/1) sandy loam, very dark gray (10YR 3/1) dry; weak medium subangular blocky structure parting to weak fine subangular blocky; friable; many very fine roots; slightly effervescent; 2 percent gravel; slightly alkaline; clear smooth boundary.
- Bk—8 to 16 inches; dark gray (10YR 4/1) sandy loam; weak medium subangular blocky structure parting to weak fine subangular blocky; friable; common very fine roots; common faint gray (10YR 5/1) carbonate coats on faces of peds and in pores; violently effervescent; 2 percent gravel; moderately alkaline; clear wavy boundary.
- C1—16 to 20 inches; brown (10YR 5/3) gravelly coarse sand; common fine prominent dark yellowish brown (10YR 4/6) and few fine faint light yellowish brown (2.5Y 6/4) iron concentrations; single grain; loose; few very fine roots; slightly effervescent; 15 percent gravel; slightly alkaline; clear wavy boundary.
- C2—20 to 26 inches; light yellowish brown (10YR 6/4) coarse sand; common fine prominent olive yellow (2.5Y 6/6) and few fine distinct yellowish brown (10YR 5/6) iron concentrations; single grain; loose; slightly effervescent; 6 percent gravel; slightly alkaline; gradual wavy boundary.
- C3—26 to 34 inches; light yellowish brown (2.5Y 6/3)

coarse sand; many medium prominent brownish yellow (10YR 6/6) and common fine distinct yellowish brown (10YR 5/6) iron concentrations; single grain; loose; slightly effervescent; 3 percent gravel; slightly alkaline; gradual wavy boundary.

- C4—34 to 45 inches; light yellowish brown (2.5Y 6/3) coarse sand; few fine prominent brownish yellow (10YR 6/6) and common fine distinct yellowish brown (10YR 5/6) iron concentrations; single grain; loose; slightly effervescent; 3 percent gravel; slightly alkaline; gradual wavy boundary.
- C5—45 to 68 inches; light yellowish brown (2.5Y 6/3) sand; few fine faint light yellowish brown (2.5Y 6/4) and few fine prominent yellowish brown (10YR 5/6) iron concentrations; single grain; loose; slightly effervescent; slightly alkaline; gradual wavy boundary.
- C6—68 to 80 inches; light brownish gray (2.5Y 6/2) sand; common medium distinct olive yellow (2.5Y 6/6) and few fine prominent yellowish brown (10YR 5/6) iron concentrations; single grain; loose; slightly effervescent; slightly alkaline.

# Range in Characteristics

Thickness of the mollic epipedon: 8 to 14 inches

Ap horizon:

Hue-10YR

Value—2 or 3

Chroma—1 or 2

Texture—sandy loam

Content of rock fragments—0 to 2 percent

Bk horizon:

Hue-10YR

Value—4 or 5

Chroma—1

Texture—sandy loam or coarse sandy loam Content of rock fragments—0 to 5 percent

C horizon:

Hue-10YR or 2.5Y

Value—5 or 6

Chroma-2 to 4

Texture—sand or coarse sand

Content of rock fragments—0 to 25 percent

# 1428—Karlsruhe sandy loam, MAP 18-22, 0 to 3 percent slopes

## Component Descriptions

## Karlsruhe and similar soils

Extent: 85 percent of the unit

Geomorphic description: Rises on beach plains

Slope range: 0 to 3 percent

Texture of the surface layer: Sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained

Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.0 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.2 inches

Content of organic matter in the upper 10 inches: 4.8 percent

# Syrene and similar soils

Extent: 10 percent of the unit

Geomorphic description: Swales on beach plains; flats

on beach plains

Slope range: 0 to 2 percent

Texture of the surface layer: Sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.3 foot (April)

Wet soil moisture status is lowest (depth, months): 3.3 feet (February, August)

Ponding does not occur (months): January, February, March, July, August, September, October, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 4.3 inches

Content of organic matter in the upper 10 inches: 5.5 percent

## Ulen and similar soils

Extent: 5 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60

inches

Drainage class: Moderately well drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.0 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (August)

Ponding: None

Available water capacity to a depth of 60 inches: 5.1 inches

Content of organic matter in the upper 10 inches: 3.5 percent

## Management

Major uses: Hayland, pasture, and cropland

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- · "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

## Karlstad Series

Drainage class: Moderately well drained

Permeability: Upper part—moderately rapid; lower

part-rapid

Landform: Beach ridges

Parent material: Beach deposits Slope range: 0 to 3 percent

Taxonomic classification: Coarse-loamy, mixed,

superactive, frigid Aquic Hapludalfs

# Typical Pedon

Karlstad loamy sand, 1,650 feet south and 150 feet west of the northeast corner of sec. 22, T. 159 N., R. 41 W.

- Ap—0 to 6 inches; very dark gray (10YR 3/1) loamy sand, dark grayish brown (10YR 4/2) dry; weak medium subangular blocky structure; very friable; many very fine and fine roots; neutral; abrupt smooth boundary.
- E—6 to 7 inches; brown (10YR 4/3) loamy sand; single grain; loose; many very fine and fine roots; neutral; clear wavy boundary.
- Bt1—7 to 10 inches; dark yellowish brown (10YR 4/4) sandy loam; weak medium subangular blocky structure; friable; common very fine and fine roots; common distinct discontinuous brown (10YR 4/3) clay films on faces of peds; 5 percent gravel; neutral; clear wavy boundary.
- 2Bt2—10 to 14 inches; dark yellowish brown (10YR 4/4) gravelly sandy loam; few fine faint dark grayish brown (10YR 4/2) iron depletions; weak medium subangular blocky structure; friable; common distinct discontinuous brown (10YR 4/3)

clay films on faces of peds; 15 percent gravel; neutral; clear wavy boundary.

2C1—14 to 54 inches; light brownish gray (2.5Y 6/2) sand; few fine prominent strong brown (7.5YR 5/6) iron concentrations; single grain; loose; slightly effervescent; 3 percent gravel; slightly alkaline; gradual wavy boundary.

2C2—54 to 80 inches; light brownish gray (2.5Y 6/2) sand; common fine and medium prominent strong brown (7.5YR 5/6) iron concentrations; single grain; loose; slightly effervescent; 3 percent gravel; slightly alkaline.

## Range in Characteristics

Depth to carbonates: 9 to 29 inches

Ap or A horizon:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—loamy sand

Content of rock fragments—0 to 5 percent

E horizon:

Hue—10YR

Value—4 or 5

Chroma-2 or 3

Texture—loamy sand

Content of rock fragments—0 to 5 percent

Bt horizon:

Hue—10YR or 7.5YR

Value—3 or 4

Chroma—3 or 4

Texture—coarse sandy loam, sandy loam, or

sandy clay loam

Content of rock fragments—2 to 10 percent

2Bt horizon:

Hue-10YR or 7.5YR

Value—3 to 5

Chroma—2 to 4

Texture—sandy loam or coarse sandy loam Content of rock fragments—15 to 35 percent

2C horizon:

Hue-2.5Y or 10YR

Value—5 or 6

Chroma—2 or 3

Texture—sand, coarse sand, or loamy coarse sand

Content of rock fragments—0 to 50 percent

# 205—Karlstad loamy sand, 0 to 3 percent slopes

# Component Descriptions

#### Karlstad and similar soils

Extent: 85 percent of the unit

Geomorphic description: Beach ridges Position on the landform: Backslopes

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy sand

Depth to restrictive feature: Very deep (more than 60

inches

Drainage class: Moderately well drained

Parent material: Beach deposits

Floodina: None

Wet soil moisture status is highest (depth, months):

3.0 feet (April)

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet (July, August)

Ponding: None

Available water capacity to a depth of 60 inches: 3.2

inches

Content of organic matter in the upper 10 inches: 2.1

percent

## Sahkahtay and similar soils

Extent: 7 percent of the unit

Geomorphic description: Flats on beach plains; swales

on beach plains

Slope range: 0 to 2 percent

Texture of the surface layer: Sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

0.3 foot (April)

Wet soil moisture status is lowest (depth, months): 3.3

feet (February, August)

Ponding does not occur (months): January, February,

March, July, August, September, November,

December

Ponding is deepest (depth, months): 0.3 foot (April,

iviay)

Available water capacity to a depth of 60 inches: 4.0

inches

Content of organic matter in the upper 10 inches: 1.6

percent

## Marquette and similar soils

Extent: 5 percent of the unit

Geomorphic description: Beach ridges Position on the landform: Shoulders, summits

Slope range: 1 to 8 percent

Texture of the surface layer: Loamy sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Excessively drained Parent material: Beach deposits

Flooding: None

Depth to wet soil moisture status: More than 6.7 feet

all year Ponding: None

Available water capacity to a depth of 60 inches: 3.3

inches

Content of organic matter in the upper 10 inches: 1.6

percent

# Redby and similar soils

Extent: 2 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Somewhat poorly drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 1.5 feet (April)

Wet soil moisture status is lowest (depth, months):
More than 6.7 feet (August)

Pondina: None

Available water capacity to a depth of 60 inches: 4.8

inches

Content of organic matter in the upper 10 inches: 0.6 percent

porconi

## Pits, gravel

Extent: 1 percent of the unit Slope range: 1 to 50 percent

Definition: Areas from which sand and gravel have

been removed

## Management

Major uses: Pasture, hayland, and forest land

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Forest Land" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

# 1327B—Karlstad-Marquette complex, 0 to 8 percent slopes

# Component Descriptions

#### Karlstad and similar soils

Extent: 65 percent of the unit

Geomorphic description: Beach ridges Position on the landform: Backslopes

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained

Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

3.0 feet (April)

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet (July, August)

Ponding: None

Available water capacity to a depth of 60 inches: 3.3

inches

Content of organic matter in the upper 10 inches: 2.5

percent

## Marquette and similar soils

Extent: 25 percent of the unit

Geomorphic description: Beach ridges

Position on the landform: Shoulders, summits

Slope range: 1 to 8 percent

Texture of the surface layer: Loamy sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Excessively drained Parent material: Beach deposits

Floodina: None

Depth to wet soil moisture status: More than 6.7 feet

all year Ponding: None

Available water capacity to a depth of 60 inches: 3.5

inches

Content of organic matter in the upper 10 inches: 2.0

percent

# Sahkahtay and similar soils

Extent: 7 percent of the unit

Geomorphic description: Flats on beach plains; swales

on beach plains

Slope range: 0 to 2 percent

Texture of the surface layer: Sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.3 foot (April)

Wet soil moisture status is lowest (depth, months): 3.3 feet (February, August)

Ponding does not occur (months): January, February, March, July, August, September, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 4.0 inches

Content of organic matter in the upper 10 inches: 1.6 percent

# Redby and similar soils

Extent: 3 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Somewhat poorly drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 1.5 feet (April)

Wet soil moisture status is lowest (depth, months):
More than 6.7 feet (August)

Pondina: None

Available water capacity to a depth of 60 inches: 4.8

Content of organic matter in the upper 10 inches: 0.6 percent

## Management

Major uses: Pasture, hayland, and forest land

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Forest Land" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

## Kratka Series

Drainage class: Very poorly drained and poorly drained

Permeability: Upper part—moderately rapid; lower part—moderately slow or moderate

Landform: Lake plains

Parent material: Glaciolacustrine deposits over till

Slope range: 0 to 2 percent

Taxonomic classification: Sandy over loamy, mixed, superactive, frigid Typic Endoaquolls

# Typical Pedon

Kratka fine sandy loam, 300 feet north and 2,000 feet west of the southeast corner of sec. 27, T. 159 N., R. 38 W.

- Ap—0 to 8 inches; black (10YR 2/1) fine sandy loam, very dark gray (10YR 3/1) dry; weak fine subangular blocky structure parting to weak fine granular; friable; many very fine and fine roots; slightly effervescent; neutral; clear wavy boundary.
- ABg—8 to 14 inches; dark grayish brown (10YR 3/2) loamy fine sand; few fine distinct dark yellowish brown (10YR 3/4) iron concentrations; weak fine subangular blocky structure parting to single grain; friable; common very fine roots; neutral; clear wavy boundary.
- Bg—14 to 22 inches; grayish brown (2.5Y 5/2) fine sand; many coarse distinct dark yellowish brown (10YR 4/6) and common fine distinct dark yellowish brown (10YR 3/6) iron concentrations; weak fine subangular blocky structure parting to single grain; very friable; few very fine roots; neutral; abrupt wavy boundary.
- 2Bkg1—22 to 36 inches; grayish brown (2.5Y 5/2) loam; many medium prominent dark yellowish brown (10YR 4/6) iron concentrations; weak medium subangular blocky structure parting to weak fine subangular blocky; friable; common faint discontinuous light gray (2.5Y 7/2) carbonate coats on faces of peds; violently effervescent; 2 percent gravel; slightly alkaline; gradual wavy boundary.
- 2Bkg2—36 to 47 inches; grayish brown (2.5Y 5/2) loam; many medium prominent dark yellowish brown (10YR 4/6) iron concentrations; weak thin platy structure parting to weak fine subangular blocky; friable; common faint discontinuous light gray (2.5Y 7/2) carbonate coats on faces of peds; violently effervescent; 5 percent gravel; slightly alkaline; gradual wavy boundary.
- 2Cg1—47 to 53 inches; grayish brown (2.5Y 5/2) loam; common medium prominent yellowish red (5YR 4/6) and many medium prominent dark yellowish brown (10YR 4/6) iron concentrations; weak medium platy soil fragments; friable; strongly effervescent; 7 percent gravel; slightly alkaline; gradual wavy boundary.
- 2Cg2—53 to 80 inches; grayish brown (2.5Y 5/2) loam; common coarse distinct dark yellowish brown

(10YR 4/6) and common fine prominent strong brown (7.5YR 4/6) iron concentrations; weak medium platy soil fragments; friable; strongly effervescent; 7 percent gravel; slightly alkaline.

# Range in Characteristics

Depth to carbonates: 20 to 33 inches Thickness of the mollic epipedon: 7 to 12 inches Other features: Some pedons have a Cg horizon.

Ap or A horizon:

Hue—10YR, 2.5Y, or N

Value—2 or 3

Chroma—0 to 2

Texture—fine sandy loam or mucky fine sandy

Content of rock fragments—0 to 5 percent

ABg horizon:

Hue—10YR

Value—3

Chroma—2

Texture—loamy fine sand

Content of rock fragments—0 to 5 percent

Bg horizon:

Hue-10YR or 2.5Y

Value—4 to 6

Chroma—1 to 3

Texture—sand, fine sand, loamy sand, or loamy fine sand

Content of rock fragments—0 to 5 percent

2Bkg horizon:

Hue-2.5Y or 5Y

Value—5 or 6

Chroma—2

Texture—loam

Content of rock fragments—2 to 8 percent

2Cg horizon:

Hue-10YR, 2.5Y, or 5Y

Value—4 to 6

Chroma—2 or 3

Texture—sandy loam, fine sandy loam, very fine sandy loam, loam, silt loam, loam, silty clay loam, or clay loam

Content of rock fragments—2 to 10 percent

# 481—Kratka fine sandy loam, 0 to 2 percent slopes

# Component Descriptions

### Kratka and similar soils

Extent: 85 percent of the unit

Geomorphic description: Flats on lake plains; swales on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.1

feet (August)

Ponding does not occur (months): January, February, March, July, August, September, December

Ponding is deepest (depth, months): 0.3 foot (April,

Available water capacity to a depth of 60 inches: 8.2

inches

Content of organic matter in the upper 10 inches: 2.9

percent

#### Northwood and similar soils

Extent: 5 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent *Texture of the surface layer:* Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over

glaciolacustrine deposits or till

Flooding: None

Wet soil moisture status is highest (depth, months): At

the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5

feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July,

August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October,

November, December)

Available water capacity to a depth of 60 inches: 11.8

Content of organic matter in the upper 10 inches: 67.5 percent

#### Percy and similar soils

Extent: 5 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Till Floodina: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 10.1 inches

Content of organic matter in the upper 10 inches: 6.5 percent

### **Enstrom and similar soils**

Extent: 3 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 8.1

Content of organic matter in the upper 10 inches: 1.5 percent

## Strandquist and similar soils

Extent: 2 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.1

feet (August)

Ponding does not occur (months): January, February, March, July, August, September, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, October)

Available water capacity to a depth of 60 inches: 6.3

Content of organic matter in the upper 10 inches: 3.6 percent

## Management

Major uses: Cropland; pasture and hayland

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Forest Land" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

## Lallie Series

Drainage class: Very poorly drained Permeability: Moderately slow

Landform: Lake plains

Parent material: Glaciolacustrine deposits

Slope range: 0 to 1 percent

Taxonomic classification: Fine, smectitic, calcareous, frigid Vertic Fluvaquents

Taxadjunct features: The Lallie soils in this survey area contain less clay than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soils.

## Typical Pedon

Lallie mucky silt loam, 600 feet south and 1,700 feet west of the northeast corner of sec. 36, T. 163 N., R. 41 W.

Ap—0 to 8 inches; black (10YR 2/1) mucky silt loam, very dark gray (10YR 3/1) dry; weak fine subangular blocky structure; very friable; many very fine and fine roots; slightly alkaline; clear smooth boundary.

Cg1—8 to 32 inches; dark grayish brown (2.5Y 4/2) silty clay; common fine distinct light olive brown (2.5Y 5/4) iron concentrations; massive; friable; many very fine and fine roots; few fine white (2.5Y 8/1) snail shells throughout; slightly effervescent; moderately alkaline; clear wavy boundary.

Cg2—32 to 48 inches; grayish brown (2.5Y 5/2) silty clay loam; common medium distinct light yellowish brown (2.5Y 6/4) and common fine prominent dark yellowish brown (10YR 4/6) iron concentrations; massive; friable; common very fine and fine roots; common fine white (2.5Y 8/1) snail shells throughout; strongly effervescent; slightly alkaline; gradual wavy boundary.

- Cg3—48 to 55 inches; olive gray (5Y 4/2) silty clay loam with strata of gray (5Y 6/1) silt loam and very fine sand ½ to 1/8 inch thick; common fine and medium prominent olive yellow (2.5Y 6/6) and common medium prominent yellowish brown (10YR 5/6) iron concentrations; moderate thin platy soil fragments; friable; common very fine and fine roots; few fine white (2.5Y 8/1) snail shells throughout; slightly effervescent; slightly alkaline; gradual wavy boundary.
- Cg4—55 to 68 inches; olive gray (5Y 4/2) silty clay loam with strata of light olive gray (5Y 6/2) silt loam and very fine sand 1/16 to 1/8 inch thick; common medium prominent dark yellowish brown (10YR 4/6) and common fine prominent light yellowish brown (2.5Y 6/4) iron concentrations; moderate thin platy soil fragments; friable; few fine white (2.5Y 8/1) snail shells throughout; very slightly effervescent; slightly alkaline; gradual wavy boundary.
- Cg5—68 to 75 inches; olive gray (5Y 4/2) silty clay loam with strata of light olive gray (5Y 6/2) silt loam and very fine sand 1/16 to 1/8 inch thick; common medium prominent dark yellowish brown (10YR 4/6) and common fine prominent light yellowish brown (2.5Y 6/4) iron concentrations; moderate thin platy soil fragments; friable; very slightly effervescent; few fine white (2.5Y 8/1) snail shells throughout; slightly alkaline; gradual wavy boundary.
- Cg6—75 to 80 inches; olive gray (5Y 4/2) silt loam stratified with bands of black (10YR 2/1) silt loam and very fine sandy loam <sup>1</sup>/<sub>16</sub> to <sup>1</sup>/<sub>4</sub> inch thick; common fine faint olive (5Y 5/3) and common fine faint pale olive (5Y 6/3) iron concentrations; moderate thin platy soil fragments; friable; few fine white (2.5Y 8/1) snail shells throughout; very slightly effervescent; slightly alkaline.

## Range in Characteristics

Ap or A horizon:

Hue—10YR

Value-2 or 3

Chroma—1 or 2

Texture—mucky silt loam

Cg horizon:

Hue—2.5Y or 5Y Value—4 to 6 Chroma—1 or 2

Texture—silt loam, silty clay loam, or silt loam and silty clay loam stratified with very fine sandy loam and very fine sand

# 1405—Lallie mucky silt loam, MAP 18-22, 0 to 1 percent slopes

## **Component Descriptions**

#### Lallie and similar soils

Extent: 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Mucky silt loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 1.6 feet (February, August)

Ponding is shallowest (depth, months): 0.5 foot (January, February, March, June, July, August, September, October, November, December)

Ponding is deepest (depth, months): 0.7 foot (April, May)

Available water capacity to a depth of 60 inches: 7.9 inches

Content of organic matter in the upper 10 inches: 10.6 percent

## Sax and similar soils

Extent: 7 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 14.5 inches

Content of organic matter in the upper 10 inches: 47.5 percent

#### Wabanica and similar soils

Extent: 3 percent of the unit

Geomorphic description: Flats on lake plains; swales

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Silt loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8

feet (August)

Ponding does not occur (months): January, February,

March, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, July, September, October, November)

Available water capacity to a depth of 60 inches: 12.0

inches

Content of organic matter in the upper 10 inches: 2.5

percent

## Management

Major use: Wildlife habitat

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

### Leafriver Series

Drainage class: Very poorly drained

Permeability: Upper part—moderate or moderately

rapid; lower part—rapid Landform: Lake plains

Parent material: Organic materials over

glaciolacustrine deposits Slope range: 0 to 1 percent

Taxonomic classification: Sandy, mixed, frigid Histic

Humaquepts

# Typical Pedon

Leafriver muck, 350 feet south and 2,000 feet west of the northeast corner of sec. 31, T. 160 N., R. 37 W.

Oa1—0 to 9 inches; muck, very dark brown (10YR 2/2) broken face, black (10YR 2/1) rubbed; about 5 percent fiber, 1 percent rubbed; weak fine subangular blocky structure parting to weak very fine subangular blocky; very friable; many very fine and fine roots; slightly acid; clear wavy boundary.

Oa2—9 to 13 inches; muck, black (10YR 2/1) broken face and rubbed; about 2 percent fiber, 1 percent rubbed; weak fine subangular blocky structure parting to weak very fine subangular blocky; very friable; common very fine and fine roots; neutral; clear wavy boundary.

Cg1—13 to 38 inches; grayish brown (2.5Y 5/2) fine sand; single grain; loose; neutral; gradual wavy boundary.

Cg2—38 to 80 inches; light brownish gray (2.5Y 6/2) fine sand; single grain; loose; neutral.

## Range in Characteristics

Thickness of the organic material: 8 to 16 inches Other features: Some pedons have an A horizon.

Oa horizon:

Hue-10YR or N

Value—2

Chroma—0 to 2

Texture—muck

Content of wood fragments—0 to 5 percent

Cg horizon:

Hue—10YR to 5Y

Value—4 to 7

Chroma—2

Texture—fine sand, loamy sand, or sand Content of rock fragments—0 to 5 percent

# 1402—Leafriver muck, wooded, 0 to 1 percent slopes

## **Component Descriptions**

## Leafriver, wooded, and similar soils

Extent: 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over

glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.2 foot (July, August, September)

Ponding is deepest (depth, months): 0.3 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 7.4 inches

Content of organic matter in the upper 10 inches: 70.0 percent

### Cormant and similar soils

Extent: 4 percent of the unit

Geomorphic description: Flats on lake plains; swales

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.9 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 4.9

Content of organic matter in the upper 10 inches: 3.9 percent

#### Tawas and similar soils

Extent: 4 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.2 foot (July, August, September)

Ponding is deepest (depth, months): 0.3 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 13.2 inches

Content of organic matter in the upper 10 inches: 50.0 percent

## Redby and similar soils

Extent: 2 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Somewhat poorly drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 1.5 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.8

Content of organic matter in the upper 10 inches: 0.6 percent

## Management

Major uses: Forest land and wildlife habitat

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Forest Land" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

# 1984—Leafriver muck, 0 to 1 percent slopes

## Component Descriptions

#### Leafriver and similar soils

Extent: 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over

glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 8.4 inches

Content of organic matter in the upper 10 inches: 70.0 percent

#### Cormant and similar soils

Extent: 5 percent of the unit

Geomorphic description: Flats on lake plains; swales on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.9 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 4.9 inches

Content of organic matter in the upper 10 inches: 3.9 percent

## Markey and similar soils

Extent: 3 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent
Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over

glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May, June)

Wet soil moisture status is lowest (depth, months): 2.1 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (January, February, July, August, September, October, November, December)

Ponding is deepest (depth, months): 0.5 foot (March, April, May, June)

Available water capacity to a depth of 60 inches: 17.9 inches

Content of organic matter in the upper 10 inches: 70.0 percent

## Redby and similar soils

Extent: 2 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Somewhat poorly drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 1.5 feet (April)

Wet soil moisture status is lowest (depth, months):
More than 6.7 feet (August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.8 inches

Content of organic matter in the upper 10 inches: 0.6 percent

### Management

Major uses: Pasture and wildlife habitat

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Forest Land" section
- · "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

## Lupton Series

Drainage class: Very poorly drained

Permeability: Moderately slow to moderately rapid

Landform: Lake plains

Parent material: Organic materials

Slope range: 0 to 1 percent

Taxonomic classification: Euic, frigid Typic

Haplosaprists



Figure 2.—A profile of Baudette fine sandy loam. The surface layer (A horizon) extends to a depth of about 8 centimeters (3 inches). A layer of clay depletion (E horizon) is between the depths of 8 and 25 centimeters (3 and 10 inches). A layer of clay accumulation (Bt horizon) is between the depths of 25 and 35 centimeters (10 and 14 inches). The layer from the depth of 35 to 75 centimeters (14 to 30 inches) has an accumulation of lime (Bk horizon). This soil formed in glaciolacustrine deposits. Depth is marked in centimeters.



Figure 3.—A profile of Corliss loamy sand. The surface layer (A horizon) extends to a depth of about 4 inches. This soil formed in beach deposits and consists of stratified sand and gravel. Depth is marked in inches.



Figure 4.—A profile of a Foldahl soil. The surface layer (Ap horizon) extends to a depth of about 8 inches. A sandy mantle (Bw horizon) is between the depths of about 8 and 22 inches. Glacial till (2C horizon) begins at a depth of 22 inches. Soft masses of lime are visible in the 2C horizon. This soil formed in glaciolacustrine deposits over loamy glacial till. Depth is marked in feet.



Figure 5.—A profile of Garnes fine sandy loam. The surface layer (A horizon) extends to a depth of about 7 inches. A layer of clay depletion (E horizon) is between the depths of 7 and 14 inches, and a layer of clay accumulation (Bt horizon) is between the depths of 14 and 22 inches. A zone of calcium carbonate enrichment (Bk horizon) occurs below the Bt horizon. This soil formed in glaciolacustrine deposits and glacial till. Depth is marked in inches.



Figure 6.—A profile of Glyndon very fine sandy loam. Directly below the dark surface layer (Ap horizon) is a zone of lime accumulation (Bk horizon). This soil formed in glaciolacustrine deposits.

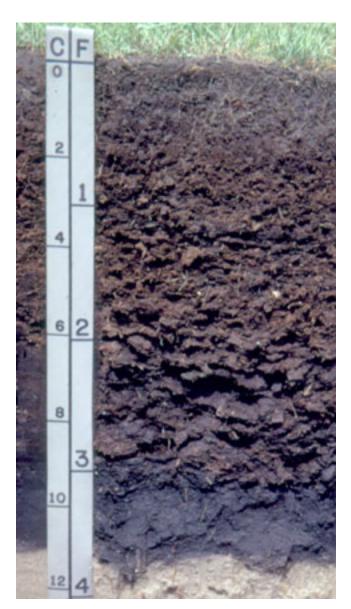


Figure 7.—A profile of Markey muck. The organic layer (Oa horizon) extends to a depth of about 45 inches. Sand begins at a depth of about 45 inches (Cg horizon). This soil formed in organic materials over glaciolacustrine deposits. Depth is marked in feet and centimeters.

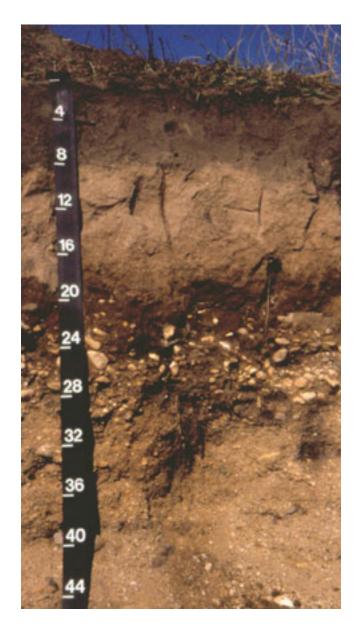


Figure 8.—A profile of Marquette loamy sand. The surface layer (A horizon) extends to a depth of about 7 inches. A layer of clay depletion (E horizon) is between the depths of 7 and 19 inches, and a layer of clay accumulation (Bt horizon) is between the depths of 19 and 26 inches. Stratified sand and gravel are below a depth of 26 inches (C horizon). This soil formed in beach deposits. Depth is marked in inches.



Figure 9.—A profile of Percy loam, 0 to 2 percent slopes, very cobbly. This soil formed in glacial till. The surface layer (Ap horizon) extends to a depth of about 25 centimeters (10 inches). Mottling begins directly below the surface layer. This soil has a large percentage of lime throughout the profile. Depth is marked in centimeters.



Figure 10.—A profile of Redby loamy fine sand. The surface layer (A horizon) extends to a depth of about 2 inches. A leached zone (E horizon) extends to a depth of about 5 inches. Mottling begins at a depth of about 14 inches. This soil formed in glaciolacustrine deposits. Depth is marked in inches.



Figure 11.—A profile of Strathcona fine sandy loam. The surface layer (Ap horizon) extends to a depth of about 11 inches. A layer of lime accumulation (Bkg horizon) is between the depths of 11 and 22 inches. Loamy glacial till begins at a depth of about 31 inches (2Cg horizon). This soil formed in glaciolacustrine deposits over glacial till. Depth is marked in inches.



Figure 12.—A profile of Zimmerman fine sand. The surface layer (A horizon) extends to a depth of about 3 inches. Lamellae begin at a depth of about 20 inches. The profile is leached of lime. This soil formed in beach deposits. Depth is marked in feet and centimeters.

# Typical Pedon

Lupton muck, 100 feet north and 1,200 feet east of the southwest corner of sec. 26, T. 164 N., R. 40 W.

- Oa1—0 to 16 inches; muck, black (N 2/0) broken face and rubbed; about 18 percent fiber, 5 percent rubbed; weak fine subangular blocky structure; very friable; many very fine roots; about 20 percent wood fragments; neutral; clear smooth boundary.
- Oa2—16 to 29 inches; muck, black (5YR 2.5/1) broken face and rubbed; about 20 percent fiber, 6 percent rubbed; weak fine subangular blocky structure; very friable; about 27 percent wood fragments; neutral; clear smooth boundary.
- Oa3—29 to 41 inches; muck, black (5YR 2.5/1) broken face and rubbed; about 35 percent fiber, 8 percent rubbed; weak fine subangular blocky structure; very friable; about 30 percent wood fragments; neutral; clear smooth boundary.
- Oa4—41 to 80 inches; muck, black (N 2/0) broken face and rubbed; about 30 percent fiber, 7 percent rubbed; massive; very friable; about 30 percent wood fragments; neutral.

# Range in Characteristics

Thickness of the organic material: More than 51 inches

Oa horizon:

Hue-5YR, 7.5YR, 10YR, or N

Value—2 or 3 Chroma—0 to 2

Texture—muck

Content of wood fragments—10 to 30 percent

# 546—Lupton muck, MAP 22-30, 0 to 1 percent slopes

## Component Descriptions

#### Lupton and similar soils

Extent: 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 1.6 feet (February, August)

Ponding is shallowest (depth, months): 0.2 foot (July, August, September)

Ponding is deepest (depth, months): 0.3 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 23.9 inches

Content of organic matter in the upper 10 inches: 80.0 percent

### Bullwinkle and similar soils

Extent: 0 to 10 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits or till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.2 foot (July, August, September)

Ponding is deepest (depth, months): 0.3 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 22.7 inches

Content of organic matter in the upper 10 inches: 72.5 percent

#### Dora and similar soils

Extent: 0 to 10 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.2 foot (July, August, September)

Ponding is deepest (depth, months): 0.3 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 16.8 inches

Content of organic matter in the upper 10 inches: 55.5 percent

#### Tawas and similar soils

Extent: 0 to 10 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.2 foot (July, August, September)

Ponding is deepest (depth, months): 0.3 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 13.2 inches

Content of organic matter in the upper 10 inches: 50.0 percent

## Management

Major uses: Forest land and wildlife habitat

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- · "Forest Land" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

## Mahkonce Series

Drainage class: Moderately well drained

Permeability: Slow Landform: Lake plains Parent material: Till

Slope range: 0 to 3 percent

Taxonomic classification: Fine, smectitic, frigid Aquertic Hapludalfs

# Typical Pedon

Mahkonce fine sandy loam, 1,045 feet south and 2 feet east of the northwest corner of sec. 28, T. 162 N., R. 37 W.

- A—0 to 3 inches; very dark gray (10YR 3/1) fine sandy loam, dark gray (10YR 4/1) dry; weak fine subangular blocky structure; friable; many fine and very fine roots; 1 percent gravel; slightly acid; abrupt wavy boundary.
- E—3 to 5 inches; light brownish gray (10YR 6/2) fine sandy loam; common fine distinct dark yellowish brown (10YR 4/6) iron concentrations; weak fine subangular blocky structure; friable; many fine and very fine roots; common fine distinct very dark gray (10YR 3/1) organic coats on faces of peds; 1 percent gravel; slightly acid; clear wavy boundary.
- Bt—5 to 16 inches; light olive brown (2.5Y 5/3) clay; common fine distinct grayish brown (2.5Y 5/2) iron depletions and common fine prominent dark yellowish brown (10YR 4/6) iron concentrations; weak fine prismatic structure parting to weak fine angular blocky; firm; common fine and very fine roots; many distinct discontinuous dark grayish brown (2.5Y 4/2) clay films on faces of peds; common fine distinct very dark gray (N 3/0) organic coats on faces of peds; 1 percent gravel; slightly acid; clear wavy boundary.
- Btk—16 to 23 inches; light olive brown (2.5Y 5/3) silty clay; common fine distinct light brownish gray (2.5Y 6/2) iron depletions and common fine prominent dark yellowish brown (10YR 4/6) iron concentrations; weak fine prismatic structure parting to weak fine angular blocky; firm; common fine and very fine roots; many distinct discontinuous dark grayish brown (2.5Y 4/2) clay films on faces of peds; common fine distinct very dark gray (N 3/0) organic coats on faces of peds; 1 percent gravel; slightly effervescent; neutral; clear wavy boundary.
- Bk—23 to 64 inches; light brownish gray (2.5Y 6/2) silty clay loam with dark grayish brown (2.5Y 4/2) bands of clay ¹/16 to ¹/8 inch thick; many fine distinct light yellowish brown (2.5Y 6/3), many fine prominent dark yellowish brown (10YR 4/6), and few fine faint pale yellow (2.5Y 7/3) iron concentrations; weak fine prismatic structure parting to weak fine subangular blocky; friable; few fine roots; common fine and medium faint white (2.5Y 8/2) threads and soft masses of lime on

faces of peds; 3 percent gravel; strongly effervescent; moderately alkaline; gradual wavy boundary.

C—64 to 80 inches; light brownish gray (2.5Y 6/2) silty clay loam with dark grayish brown (2.5Y 4/2) bands of clay ½ to ½ inch thick; many fine distinct light yellowish brown (2.5Y 6/3), many medium prominent dark yellowish brown (10YR 4/6), and few medium prominent dark reddish brown (5YR 3/3) iron concentrations; massive; friable; common fine and medium faint white (2.5Y 8/2) threads and soft masses of lime on faces of peds; 3 percent gravel; strongly effervescent; slightly alkaline.

## Range in Characteristics

Depth to carbonates: 16 to 26 inches

A or Ap horizon:

Hue—10YR

Value—3

Chroma—1 or 2

Texture—fine sandy loam

Content of rock fragments—1 to 2 percent

E horizon (if it occurs):

Hue-10YR or 2.5Y

Value—5 or 6

Chroma—2

Texture—fine sandy loam

Content of rock fragments—1 to 2 percent

Bt or Btk horizon:

Hue—10YR or 2.5Y

Value—3 to 5

Chroma-2 or 3

Texture—clay loam or clay

Content of rock fragments—1 to 5 percent

Bk horizon:

Hue-2.5Y

Value—4 to 6

Chroma—2 to 4

Texture—loam, clay loam, silty clay loam, or silty clay loam stratified with clay

Content of rock fragments—1 to 5 percent

C horizon:

Hue-2.5Y

Value—5 or 6

Chroma-2 or 3

Texture—loam, clay loam, silty clay loam, or silty clay loam stratified with clay

Content of rock fragments—1 to 5 percent

# 737—Mahkonce fine sandy loam, 0 to 3 percent slopes

## Component Descriptions

#### Mahkonce and similar soils

Extent: 85 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained

Parent material: Till Floodina: None

Wet soil moisture status is highest (depth, months):

2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7

feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 9.7

inches

Content of organic matter in the upper 10 inches: 2.0

percent

#### Auganaush and similar soils

Extent: 10 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): At

the surface (April)

Wet soil moisture status is lowest (depth, months): 3.3

feet (August)

Ponding does not occur (months): January, February,

March, December

Ponding is deepest (depth, months): 0.3 foot (April,

May, June, November)

Available water capacity to a depth of 60 inches: 10.3

inches

Content of organic matter in the upper 10 inches: 3.3

percent

## **Eckvoll and similar soils**

Extent: 5 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy fine sand Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 8.7 inches

Content of organic matter in the upper 10 inches: 1.5 percent

## Management

Major uses: Cropland, pasture, and forest land

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Forest Land" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

## Markey Series

Drainage class: Very poorly drained

Permeability: Upper part—moderately slow to moderately rapid; lower part—rapid

Landform: Lake plains

Parent material: Organic materials over

glaciolacustrine deposits Slope range: 0 to 1 percent

Taxonomic classification: Sandy or sandy-skeletal, mixed, euic, frigid Terric Haplosaprists

## Typical Pedon

Markey muck (fig. 7), 400 feet south and 2,400 feet east of the northwest corner of sec. 32, T. 160 N., R. 37 W.

Oa1—0 to 8 inches; muck, very dark brown (10YR 2/2) broken face, black (10YR 2/1) rubbed; about 5 percent fiber, 2 percent rubbed; weak fine subangular blocky structure; very friable; many very fine and common fine roots; moderately acid; gradual wavy boundary.

Oa2—8 to 15 inches; muck, very dark brown (10YR 2/2) broken face, very dark gray (10YR 3/1) rubbed; about 5 percent fiber, 2 percent rubbed;

weak fine subangular blocky structure; very friable; many very fine and common fine roots; moderately acid; gradual wavy boundary.

Oa3—15 to 24 inches; muck, very dark brown (10YR 2/2) broken face and rubbed; about 5 percent fiber, 2 percent rubbed; weak fine subangular blocky structure; very friable; many very fine and common fine roots; strongly acid; gradual wavy boundary.

Oa4—24 to 34 inches; muck, very dark brown (10YR 2/2) broken face, black (10YR 2/1) rubbed; about 5 percent fiber, 2 percent rubbed; weak fine subangular blocky structure; very friable; many very fine and fine roots; moderately acid; clear wavy boundary.

Oa5—34 to 42 inches; muck, black (10YR 2/1) broken face and rubbed; about 3 percent fiber, 2 percent rubbed; weak fine subangular blocky structure; very friable; moderately acid; clear wavy boundary.

Cg—42 to 80 inches; grayish brown (10YR 5/2) fine sand; single grain; loose; moderately acid.

## Range in Characteristics

Depth to carbonates: 16 to 51 inches Thickness of the organic material: 16 to 51 inches Other features: Some pedons have an A horizon.

Oa horizon:

Hue—10YR Value—2 or 3 Chroma—1 or 2 Texture—muck

Cg horizon:

Hue-10YR, 2.5Y, or 5Y

Value—4 to 6 Chroma—1 to 3

Texture—sand, loamy sand, fine sand, or loamy

fine sand

Content of rock fragments—0 to 10 percent

# 543—Markey muck, MAP 18-22, 0 to 1 percent slopes

## Component Descriptions

# Markey and similar soils

Extent: 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May, June)

Wet soil moisture status is lowest (depth, months): 2.1 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (January, February, July, August, September, October, November, December)

Ponding is deepest (depth, months): 0.5 foot (March, April, May, June)

Available water capacity to a depth of 60 inches: 17.9 inches

Content of organic matter in the upper 10 inches: 70.0 percent

#### Cormant and similar soils

Extent: 5 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy fine sand Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.9 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 4.9 inches

Content of organic matter in the upper 10 inches: 3.9 percent

#### Seelyeville and similar soils

Extent: 5 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

inches)

Drainage class: Very poorly drained Parent material: Organic materials

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 1.6 feet (February, August)

Ponding is shallowest (depth, months): 0.3 foot (January, February, July, August, September, October, November, December)

Ponding is deepest (depth, months): 0.5 foot (March, April, May, June)

Available water capacity to a depth of 60 inches: 23.9 inches

Content of organic matter in the upper 10 inches: 62.0 percent

## Management

Major uses: Wildlife habitat and pasture

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Forest Land" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

# 1808—Markey muck, ponded, MAP 22-30, 0 to 1 percent slopes

## Component Descriptions

# Markey, ponded, and similar soils

Extent: 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status: At the surface all year

Ponding depth: 1.0 foot all year

Available water capacity to a depth of 60 inches: 9.3

Content of organic matter in the upper 10 inches: 70.0 percent

#### Leafriver and similar soils

Extent: 4 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

inches)

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 8.4 inches

Content of organic matter in the upper 10 inches: 70.0 percent

## Seelyeville, ponded, and similar soils

Extent: 4 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials

Flooding: None

Wet soil moisture status: At the surface all year

Ponding depth: 1.0 foot all year

Available water capacity to a depth of 60 inches: 23.9

inches

Content of organic matter in the upper 10 inches: 62.0 percent

## Cormant and similar soils

Extent: 2 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.9 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, November, December Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 4.9 inches

Content of organic matter in the upper 10 inches: 3.9 percent

## Management

Major use: Wildlife habitat

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Forest Land" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

# Marquette Series

Drainage class: Excessively drained

Permeability: Upper part—moderately rapid; lower

part—very rapid

Landform: Beach ridges

Parent material: Beach deposits

Slope range: 1 to 8 percent

Taxonomic classification: Loamy-skeletal, mixed, superactive, frigid Inceptic Hapludalfs

## Typical Pedon

Marquette loamy sand (fig. 8), 250 feet south and 300 feet west of the northeast corner of sec. 31, T. 160 N., R. 40 W.

A—0 to 7 inches; black (10YR 2/1) loamy sand, dark gray (10YR 4/1) dry; weak very fine and fine granular structure; very friable; many very fine and fine roots; 5 percent gravel and 3 percent cobbles; neutral; clear smooth boundary.

Bt1—7 to 10 inches; brown (10YR 4/3) sandy loam; weak fine and medium subangular blocky structure; very friable; common very fine and fine roots; very few faint discontinuous dark brown (10YR 3/3) clay bridges and films on faces of peds; 10 percent gravel; neutral; clear wavy boundary.

Bt2—10 to 16 inches; brown (10YR 4/3) very gravelly sandy loam; weak fine subangular blocky structure; very friable; few faint discontinuous very dark grayish brown (10YR 3/2) clay films on faces of peds and few distinct patchy white (10YR 8/1) carbonate coats on the lower surface of rock fragments; slightly effervescent; 55 percent gravel

and 5 percent cobbles; neutral; clear wavy boundary.

C1—16 to 32 inches; brown (10YR 5/3) sand; single grain; loose; very few distinct patchy white (10YR 8/1) carbonate coats on the lower surface of rock fragments; slightly effervescent; 5 percent gravel and 2 percent cobbles; slightly alkaline; clear wavy boundary.

C2—32 to 70 inches; yellowish brown (10YR 5/4) extremely gravelly coarse sand; single grain; loose; very few distinct patchy white (10YR 8/1) carbonate coats on the lower surface of rock fragments; strongly effervescent; 75 percent gravel; slightly alkaline; clear wavy boundary.

C3—70 to 80 inches; brown (10YR 5/3) sand; single grain; loose; slightly effervescent; slightly alkaline.

## Range in Characteristics

Depth to carbonates: 10 to 18 inches

Other features: Some pedons have an E horizon.

A or Ap horizon:

Hue—10YR

Value—2 or 3 Chroma—1 or 2

Texture—loamy sand

Content of rock fragments—0 to 10 percent

Bt horizon:

Hue-10YR or 7.5YR

Value—3 or 4

Chroma—3 or 4

Texture—sandy loam or loam

Content of rock fragments—35 to 65 percent

C horizon:

Hue-10YR

Value—5 or 6

Chroma—2 to 4

Texture—sand or coarse sand

Content of rock fragments—10 to 75 percent

# 242B—Marquette loamy sand, 1 to 8 percent slopes

# Component Descriptions

# Marquette and similar soils

Extent: 85 percent of the unit

Geomorphic description: Beach ridges Position on the landform: Shoulders, summits

Slope range: 1 to 8 percent

Texture of the surface layer: Loamy sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Excessively drained Parent material: Beach deposits

Flooding: None

Depth to wet soil moisture status: More than 6.7 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 3.3

inches

Content of organic matter in the upper 10 inches: 1.6

percent

#### Karlstad and similar soils

Extent: 14 percent of the unit

Geomorphic description: Beach ridges Position on the landform: Backslopes

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained

Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

3.0 feet (April)

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet (July, August)

Ponding: None

Available water capacity to a depth of 60 inches: 3.2

inches

Content of organic matter in the upper 10 inches: 2.1

percent

### Pits, gravel

Extent: 1 percent of the unit Slope range: 1 to 50 percent

Definition: Areas from which sand and gravel have

been removed

#### Management

Major uses: Pasture, hayland, and forest land

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Forest Land" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

## Mavie Series

Drainage class: Poorly drained

Permeability: Upper part—rapid; lower part—

moderately slow or moderate

Landform: Lake plains

Parent material: Glaciolacustrine deposits over till

Slope range: 0 to 2 percent

Taxonomic classification: Sandy-skeletal over loamy, mixed, superactive, frigid Typic Calciaquolls

## Typical Pedon

Mavie fine sandy loam, 2,500 feet south and 250 feet east of the northwest corner of sec. 29, T. 161 N., R. 42 W.

- Ap—0 to 12 inches; black (10YR 2/1) fine sandy loam, dark gray (10YR 4/1) dry; weak fine subangular blocky structure; friable; many fine roots; strongly effervescent; 1 percent gravel; slightly alkaline; clear smooth boundary.
- Bkg—12 to 18 inches; grayish brown (2.5Y 5/2) fine sandy loam; few fine distinct light olive brown (2.5Y 5/4) iron concentrations; weak fine subangular blocky structure; friable; many fine roots; violently effervescent; 1 percent gravel; moderately alkaline; clear wavy boundary.
- 2Cg1—18 to 29 inches; light brownish gray (2.5Y 6/2) very gravelly sand; few fine distinct light olive brown (2.5Y 5/4) iron concentrations; single grain; loose; slightly effervescent; 55 percent gravel; slightly alkaline; gradual wavy boundary.
- 2Cg2—29 to 39 inches; light brownish gray (2.5Y 6/2) very gravelly sand; few fine prominent dark yellowish brown (10YR 4/6) iron concentrations; single grain; loose; slightly effervescent; 45 percent gravel; slightly alkaline; clear wavy boundary.
- 3Cg3—39 to 80 inches; light brownish gray (2.5Y 6/2) loam; many medium distinct light olive brown (2.5Y 5/6) and many fine prominent olive yellow (2.5Y 6/8) iron concentrations; massive; strongly effervescent; 5 percent gravel; moderately alkaline.

## Range in Characteristics

Thickness of the mollic epipedon: 7 to 12 inches

Ap horizon:

Hue—10YR, 2.5Y, or N

Value—2

Chroma—0 or 1

Texture—fine sandy loam

Content of rock fragments—0 to 10 percent

Bkg horizon:

Hue-2.5Y

Value—4 or 5

Chroma-1 or 2

Texture—sandy loam, fine sandy loam, or loam Content of rock fragments—0 to 10 percent

2Cg horizon:

Hue-2.5Y

Value-4 to 6

Chroma—2

Texture—sand, coarse sand, or loamy sand Content of rock fragments—15 to 55 percent

3Cg horizon:

Hue-2.5Y

Value—6

Chroma—2

Texture—loam or silt loam

Content of rock fragments—0 to 10 percent

# 412—Mavie fine sandy loam, 0 to 2 percent slopes

# Component Descriptions

## Mavie and similar soils

Extent: 85 percent of the unit

Geomorphic description: Flats on lake plains; swales

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.1

feet (August)

Ponding does not occur (months): January, February, March, July, August, September, November,

December

Ponding is deepest (depth, months): 0.3 foot (April,

May, June, October)

Available water capacity to a depth of 60 inches: 7.3

inches

Content of organic matter in the upper 10 inches: 4.5 percent

percent

#### Foxhome and similar soils

Extent: 5 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 8.3 inches

Content of organic matter in the upper 10 inches: 5.0 percent

#### Northwood and similar soils

Extent: 5 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits or till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 11.8 inches

Content of organic matter in the upper 10 inches: 67.5 percent

## Percy, very cobbly, and similar soils

Extent: 5 percent of the unit

Geomorphic description: Flats on lake plains; swales on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Till Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 10.0 inches

Content of organic matter in the upper 10 inches: 5.4 percent

## Management

Major uses: Cropland; pasture and hayland

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

### Meehan Series

Drainage class: Somewhat poorly drained

Permeability: Rapid Landform: Lake plains

Parent material: Glaciolacustrine deposits

Slope range: 0 to 2 percent

Taxonomic classification: Mixed, frigid Aquic

Udipsamments

# Typical Pedon

Meehan loamy sand, 600 feet north and 1,400 feet east of the southwest corner of sec. 28, T. 161 N., R. 35 W.

- A—0 to 3 inches; very dark gray (10YR 3/1) loamy sand, dark gray (10YR 4/1) dry; weak fine subangular blocky structure; very friable; common fine and very fine roots; very strongly acid; clear wavy boundary.
- E—3 to 8 inches; dark grayish brown (10YR 4/2) sand; weak fine subangular blocky structure; very friable; common fine, very fine, and medium roots; moderately acid; clear wavy boundary.
- Bw1—8 to 12 inches; brown (10YR 5/3) sand; few fine distinct dark yellowish brown (10YR 4/4) iron concentrations; weak fine subangular blocky structure; very friable; common fine and medium roots; slightly acid; clear wavy boundary.
- Bw2—12 to 31 inches; yellowish brown (10YR 5/4) sand; common medium prominent dark yellowish brown (10YR 4/6) iron concentrations and few fine distinct grayish brown (10YR 5/2) iron depletions; weak medium subangular blocky structure; very friable; few fine, medium, and coarse roots; 1 percent gravel; slightly acid; gradual wavy boundary.
- C1—31 to 35 inches; brown (10YR 5/3) sand; few fine faint grayish brown (2.5Y 5/2) iron depletions and

common medium prominent strong brown (7.5YR 4/6) iron concentrations; single grain; loose; 1 percent gravel; slightly acid; gradual wavy boundary.

- C2-35 to 48 inches; brown (10YR 5/3) sand; few fine faint grayish brown (2.5Y 5/2) iron depletions and common medium prominent strong brown (7.5YR 4/6) iron concentrations; single grain; loose; 1 percent gravel; slightly acid; gradual wavy boundary.
- Cg1—48 to 74 inches; grayish brown (10YR 5/2) sand; few fine prominent dark brown (7.5YR 3/4) and common medium prominent strong brown (7.5YR 4/6) iron concentrations; single grain; loose; 2 percent gravel; neutral; clear wavy boundary.
- Cg2-74 to 80 inches; brown (10YR 5/3) sand; common fine distinct grayish brown (2.5Y 5/2) iron depletions and common medium prominent strong brown (7.5YR 4/6) iron concentrations; single grain; loose; slightly effervescent; neutral.

## Range in Characteristics

Depth to carbonates: More than 40 inches

#### A horizon:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—loamy sand

Content of rock fragments—0 to 2 percent

#### E horizon:

Hue—10YR

Value—4 to 6

Chroma—2

Texture—sand or loamy sand

Content of rock fragments—0 to 2 percent

#### Bw horizon:

Hue—10YR or 7.5YR

Value—4 or 5

Chroma—3 to 6

Texture—sand or coarse sand

Content of rock fragments—0 to 5 percent

## C horizon:

Hue-10YR or 2.5Y

Value—4 to 6

Chroma—3 or 4

Texture—sand or coarse sand

Content of rock fragments—0 to 10 percent

## Ca horizon:

Hue-10YR or 2.5Y

Value—5 or 6

Chroma—2

Texture—sand or coarse sand Content of rock fragments—0 to 10 percent

# 202—Meehan loamy sand, MAP 22-30, 0 to 2 percent slopes

## **Component Descriptions**

#### Meehan and similar soils

Extent: 85 percent of the unit

Geomorphic description: Rises on lake plains; flats on

lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Somewhat poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

1.5 feet (April)

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet (August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.4

Content of organic matter in the upper 10 inches: 1.4

percent

#### Cormant and similar soils

Extent: 8 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.9

feet (August)

Ponding does not occur (months): January, February,

March, July, August, September, November, December

Ponding is deepest (depth, months): 0.3 foot (April,

Available water capacity to a depth of 60 inches: 4.9 inches

Content of organic matter in the upper 10 inches: 3.9

percent

#### Wurtsmith and similar soils

Extent: 5 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (July, August)

Pondina: None

Available water capacity to a depth of 60 inches: 4.6

Content of organic matter in the upper 10 inches: 0.8 percent

#### Leafriver and similar soils

Extent: 2 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 8.4 inches

Content of organic matter in the upper 10 inches: 70.0 percent

## Management

Major uses: Forest land and pasture

For general and detailed information about managing this map unit, see the following sections:

- · "Agronomy" section
- "Forest Land" section
- "Recreation" section

- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

#### Mooselake Series

Drainage class: Very poorly drained Permeability: Moderately rapid

Landform: Lake plains

Parent material: Organic materials

Slope range: 0 to 1 percent

Taxonomic classification: Euic, frigid Typic

Haplohemists

## Typical Pedon

Mooselake mucky peat, 700 feet north and 1,200 feet east of the southwest corner of sec. 35, T. 164 N., R. 40 W.

Oe1—0 to 16 inches; mucky peat, dark reddish brown (5YR 2.5/2) broken face and pressed, black (5YR 2.5/1) rubbed; about 67 percent fiber, 17 percent rubbed; weak medium subangular blocky structure parting to weak fine subangular blocky; very friable; common very fine roots; 2 percent wood fragments; neutral; clear smooth boundary.

Oe2—16 to 31 inches; mucky peat, dark reddish brown (5YR 2.5/2) broken face, dark reddish brown (5YR 3/2) pressed and rubbed; about 55 percent fiber, 27 percent rubbed; weak medium subangular blocky structure parting to weak fine subangular blocky; very friable; 3 percent wood fragments; neutral; clear smooth boundary.

Oe3—31 to 46 inches; mucky peat, dark reddish brown (5YR 2.5/2) broken face, pressed, and rubbed; about 55 percent fiber, 33 percent rubbed; weak medium subangular blocky structure parting to weak fine subangular blocky; very friable; 3 percent wood fragments; neutral; clear smooth boundary.

Oe4—46 to 80 inches; mucky peat, dark reddish brown (5YR 2.5/2) broken face and rubbed, black (5YR 2.5/1) pressed; about 45 percent fiber, 23 percent rubbed; weak fine subangular blocky structure; very friable; 7 percent wood fragments; neutral.

# Range in Characteristics

Thickness of the organic material: More than 51 inches

Oe horizon:

Hue—7.5YR or 5YR Value—2 or 3 Chroma—1 to 3

Texture—mucky peat
Content of wood fragments—1 to 10 percent

# 534—Mooselake mucky peat, 0 to 1 percent slopes

## **Component Descriptions**

#### Mooselake and similar soils

Extent: 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Mucky peat

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 1.6 feet (February, August)

Ponding is shallowest (depth, months): 0.2 foot (July, August, September)

Ponding is deepest (depth, months): 0.3 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 26.9 inches

Content of organic matter in the upper 10 inches: 62.0 percent

### Bullwinkle and similar soils

Extent: 0 to 10 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits or till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.2 foot (July, August, September)

Ponding is deepest (depth, months): 0.3 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 22.7 inches

Content of organic matter in the upper 10 inches: 72.5 percent

#### Dora and similar soils

Extent: 0 to 10 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.2 foot (July, August, September)

Ponding is deepest (depth, months): 0.3 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 16.8 inches

Content of organic matter in the upper 10 inches: 55.5 percent

### Tawas and similar soils

Extent: 0 to 10 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.2 foot (July, August, September)

Ponding is deepest (depth, months): 0.3 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 13.2 inches

Content of organic matter in the upper 10 inches: 50.0 percent

# Management

Major uses: Forest land and wildlife habitat

For general and detailed information about managing this map unit, see the following sections:

- · "Agronomy" section
- "Forest Land" section
- "Recreation" section
- · "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

## Moranville Series

Drainage class: Moderately well drained Permeability: Upper part—rapid; lower part—

moderately slow Landform: Lake plains

Parent material: Glaciolacustrine deposits

Slope range: 0 to 4 percent

Taxonomic classification: Fine-silty, mixed, superactive, frigid Oxyaquic Hapludalfs

## Typical Pedon

Moranville loamy fine sand, 1,700 feet north and 800 feet east of the southwest corner of sec. 12, T. 161 N., R. 37 W.

- Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) loamy fine sand, grayish brown (10YR 5/2) dry; weak fine and medium granular structure; very friable; common very fine, fine, and medium roots; neutral; abrupt smooth boundary.
- E—8 to 24 inches; grayish brown (10YR 5/2) fine sand; weak thick platy structure; very friable; common very fine and fine roots; few fine distinct brown (10YR 4/3) organic coats on faces of peds; neutral; clear smooth boundary.
- 2Bt1—24 to 28 inches; dark yellowish brown (10YR 4/4) silty clay loam; few fine distinct dark yellowish brown (10YR 4/6) iron concentrations; moderate medium subangular blocky structure; friable; common very fine and fine roots; common distinct discontinuous brown (10YR 4/3) clay films and few distinct discontinuous grayish brown (10YR 5/2) sand coats on faces of peds; slightly alkaline; clear wavy boundary.
- 2Bt2—28 to 42 inches; brown (10YR 4/3) silty clay loam; common medium distinct dark yellowish brown (10YR 4/6) iron concentrations; weak medium and coarse subangular blocky structure; friable; few fine and very fine roots; common faint

- discontinuous dark grayish brown (10YR 4/2) and brown (10YR 4/3) clay films on faces of peds; slightly alkaline; clear smooth boundary.
- 2C1—42 to 62 inches; light olive brown (2.5Y 5/3 and 5/4), stratified very fine sandy loam and silt loam; few fine distinct light olive brown (2.5Y 5/6) iron concentrations; weak thick platy soil fragments; very friable; slightly effervescent; slightly alkaline; gradual wavy boundary.
- 2C2—62 to 72 inches; light yellowish brown (2.5Y 6/3) and light olive brown (2.5Y 5/4), stratified very fine sandy loam and silt loam; few fine faint light brownish gray (2.5Y 6/2) iron depletions and few fine prominent dark yellowish brown (10YR 4/6) iron concentrations; moderate thin and medium platy soil fragments; very friable; few fine white (N 8/0) soft masses of lime between peds; strongly effervescent; slightly alkaline; gradual wavy boundary.
- 2C3—72 to 80 inches; light brownish gray (2.5Y 6/2) silt loam; common medium distinct light yellowish brown (2.5Y 6/4) and common medium prominent dark yellowish brown (10YR 4/6) iron concentrations; massive; very friable; few medium white (N 8/0) soft masses of lime between peds; strongly effervescent; moderately alkaline.

## Range in Characteristics

Depth to carbonates: 30 to 51 inches Thickness of the sand cap: 20 to 40 inches

A or Ap horizon:

Hue—10YR

Value-2 to 4

Chroma—1 or 2

Texture—loamy fine sand

E horizon:

Hue-10YR or 2.5Y

Value-4 to 6

Chroma-2 to 4

Texture—fine sand or loamy fine sand

2Bt horizon:

Hue-10YR or 2.5Y

Value—4 or 5

Chroma—3 or 4

Texture—silty clay loam or silty clay

2C horizon:

Hue-10YR or 2.5Y

Value-4 to 6

Chroma-2 to 4

Texture—very fine sandy loam, silt loam, silty clay loam, or stratified with these textures; thin strata of clay in some pedons

Content of rock fragments—0 to 2 percent

# 1179B—Moranville loamy fine sand, 0 to 4 percent slopes

## Component Descriptions

### Moranville and similar soils

Extent: 85 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 4 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7

feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 7.7

inches

Content of organic matter in the upper 10 inches: 1.1

percent

### **Baudette and similar soils**

Extent: 5 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 1 to 6 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained Parent material: Glaciolacustrine deposits

Floodina: None

Wet soil moisture status is highest (depth, months):

2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7

feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 11.9

inches

Content of organic matter in the upper 10 inches: 2.1

percent

#### Hiwood and similar soils

Extent: 5 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 1 to 6 percent

Texture of the surface layer: Fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (July, August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.7

Content of organic matter in the upper 10 inches: 0.6 percent

### Spooner and similar soils

Extent: 5 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Very fine sandy loam Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8

feet (August)

Ponding does not occur (months): January, February,

March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 11.8

inches

Content of organic matter in the upper 10 inches: 2.1

percent

## Management

Major uses: Hayland, cropland, and forest land

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Forest Land" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

### Mustinka Series

Drainage class: Poorly drained

Permeability: Slow Landform: Lake plains

Parent material: Glaciolacustrine deposits over till

Slope range: 0 to 1 percent
Taxonomic classification: Fine, smectitic, frigid Typic
Argiaquolls

## Typical Pedon

Mustinka clay loam, 200 feet north and 150 feet east of the southwest corner of sec. 25, T. 162 N., R. 39 W.

- Ap—0 to 9 inches; black (N 2/0) clay loam, very dark gray (N 3/0) dry; weak fine granular structure; friable; common very fine roots; slightly alkaline; abrupt wavy boundary.
- Btg—9 to 18 inches; black (5Y 2.5/1) clay; few fine faint very dark grayish brown (2.5Y 3/2) iron depletions; weak medium prismatic structure parting to weak fine subangular blocky; firm; common very fine roots; few distinct discontinuous black (N 2/0) clay films on faces of peds and in pores and very few distinct discontinuous dark yellowish brown (10YR 3/6) organic coats in root channels and pores; slightly alkaline; clear wavy boundary.
- Btkg—18 to 35 inches; dark gray (5Y 4/1) silty clay; few fine faint olive gray (5Y 4/2) iron depletions; weak medium subangular blocky structure parting to weak fine subangular blocky; firm; few very fine roots; few distinct discontinuous very dark gray (N 3/0) clay films on faces of peds and in pores; common fine faint grayish brown (2.5Y 5/2) soft masses of lime throughout; strongly effervescent; slightly alkaline; clear wavy boundary.
- Cg1—35 to 51 inches; dark grayish brown (2.5Y 4/2) and light brownish gray (2.5Y 6/2), stratified clay and silt loam; few fine distinct olive brown (2.5Y 4/3) iron concentrations; weak thin platy soil fragments; firm; few fine distinct light gray (2.5Y 7/2) soft masses of lime throughout; slightly effervescent; moderately alkaline; gradual wavy boundary.
- Cg2—51 to 62 inches; dark gray (5Y 4/1) clay stratified with bands of light brownish gray (2.5Y 6/2) silt loam <sup>1</sup>/<sub>16</sub> to <sup>1</sup>/<sub>8</sub> inch thick; common medium prominent dark yellowish brown (10YR 3/6) iron concentrations; massive; firm; common fine prominent light gray (2.5Y 7/2) soft masses of lime throughout; slightly effervescent; moderately alkaline; clear wavy boundary.
- 2Cg3—62 to 80 inches; light brownish gray (2.5Y 6/2) silty clay loam; common medium prominent dark yellowish brown (10YR 4/4) and common fine distinct very pale brown (10YR 7/4) iron concentrations; massive; friable; strongly effervescent; 2 percent gravel and 1 percent cobbles; moderately alkaline.

## Range in Characteristics

Depth to carbonates: 18 to 33 inches

A horizon:

Hue—10YR or N Value—2 or 3 Chroma—0 or 1 Texture—clay loam

Btg horizon:

Hue—5Y or N Value—3 or 4 Chroma—0 to 2 Texture—clay or silty clay

Btkg horizon:

Hue—2.5Y or 5Y Value—3 or 4 Chroma—2 Texture—clay or silty clay

Cg horizon:

Hue—2.5Y or 5Y
Value—4 or 5
Chroma—1 or 2
Texture—clay, silty clay, silty clay loam, silt loam, or stratified with these textures

2Cg horizon:

Hue—2.5Y
Value—5 or 6
Chroma—2 or 3
Texture—clay loam, silty clay loam, or loam
Content of rock fragments—2 to 10 percent

# 1214—Mustinka clay loam, 0 to 1 percent slopes

# Component Descriptions

#### Mustinka and similar soils

Extent: 90 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Clay loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): At

the surface (April)

Wet soil moisture status is lowest (depth, months): 3.0 feet (August)

Ponding does not occur (months): January, February, March, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, November)

Available water capacity to a depth of 60 inches: 10.3 inches

Content of organic matter in the upper 10 inches: 7.1 percent

## Espelie and similar soils

Extent: 4 percent of the unit

Geomorphic description: Flats on lake plains; swales

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June)

Available water capacity to a depth of 60 inches: 7.7 inches

Content of organic matter in the upper 10 inches: 3.0 percent

#### Wildwood and similar soils

Extent: 4 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 5.7

Content of organic matter in the upper 10 inches: 62.0 percent

#### Dalbo and similar soils

Extent: 2 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60

inches

Drainage class: Moderately well drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 9.7

Content of organic matter in the upper 10 inches: 3.0 percent

## Management

Major use: Cropland

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Forest Land" section
- · "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

## **Nereson Series**

Drainage class: Moderately well drained Permeability: Moderate or moderately rapid

Landform: Lake plains
Parent material: Till
Slope range: 0 to 2 pero

Slope range: 0 to 3 percent

Taxonomic classification: Coarse-loamy, mixed, superactive, frigid Aquic Argiudolls

### Typical Pedon

Nereson fine sandy loam, 2,600 feet south and 1,800 feet west of the northeast corner of sec. 9, T. 161 N., R. 40 W.

Ap—0 to 7 inches; black (10YR 2/1) fine sandy loam, dark gray (10YR 4/1) dry; weak fine subangular

blocky structure; friable; few very fine roots; 2 percent gravel; slightly alkaline; clear wavy boundary.

Bt—7 to 11 inches; brown (10YR 4/3) sandy loam; weak medium subangular blocky structure parting to weak fine subangular blocky; friable; few very fine roots; very few faint discontinuous dark grayish brown (10YR 4/2) clay films on faces of peds; 3 percent gravel; slightly alkaline; abrupt wavy boundary.

2Bk1—11 to 18 inches; pale brown (10YR 6/3) loam; few fine faint yellowish brown (10YR 5/6) iron concentrations; weak fine subangular blocky structure; friable; few very fine roots; very few distinct discontinuous light gray (10YR 7/2) carbonate coats on the lower surface of rock fragments; strongly effervescent; 4 percent gravel; moderately alkaline; clear wavy boundary.

2Bk2—18 to 29 inches; pale brown (10YR 6/3) loam; common medium faint yellowish brown (10YR 5/6) iron concentrations; weak fine subangular blocky structure; friable; few very fine roots; very few distinct discontinuous light gray (10YR 7/2) carbonate coats on the lower surface of rock fragments; strongly effervescent; 7 percent gravel; moderately alkaline; clear wavy boundary.

2C1—29 to 63 inches; pale brown (10YR 6/3) fine sandy loam; many medium distinct light brownish gray (10YR 6/2) iron depletions and few fine distinct yellowish brown (10YR 5/6) iron concentrations; weak fine prismatic soil fragments parting to weak thin platy parting to weak fine subangular blocky; friable; very few distinct discontinuous light gray (10YR 7/2) carbonate coats on the lower surface of rock fragments; strongly effervescent; 5 percent gravel; moderately alkaline; clear wavy boundary.

2C2—63 to 80 inches; light brownish gray (10YR 6/2) loam; many medium distinct light yellowish brown (10YR 6/4), common fine distinct light yellowish brown (10YR 6/4), and few fine distinct yellowish brown (10YR 5/6) iron concentrations; weak medium subangular blocky soil fragments parting to weak thin platy; friable; strongly effervescent; 5 percent gravel; moderately alkaline.

### Range in Characteristics

Depth to carbonates: 10 to 15 inches
Thickness of the mollic epipedon: 7 to 10 inches

Ap horizon:

Hue—10YR Value—2 or 3 Chroma—1

Texture—fine sandy loam

Content of rock fragments—0 to 2 percent

#### Bt horizon:

Hue-10YR or 2.5Y

Value—3 to 5

Chroma—2 or 3

Texture—sandy loam

Content of rock fragments—2 to 10 percent

#### 2Bk horizon:

Hue-10YR or 2.5Y

Value-6

Chroma—2 or 3

Texture—loam

Content of rock fragments—2 to 10 percent

## 2C horizon:

Hue-10YR or 2.5Y

Value-5 or 6

Chroma—2

Texture—loam or fine sandy loam

Content of rock fragments—2 to 10 percent

# 583—Nereson fine sandy loam, 0 to 3 percent slopes

## Component Descriptions

## Nereson and similar soils

Extent: 85 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained

Parent material: Till Flooding: None

Wet soil moisture status is highest (depth, months):

2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7

feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 10.2

inches

Content of organic matter in the upper 10 inches: 3.8 percent

### Percy and similar soils

Extent: 10 percent of the unit

Geomorphic description: Flats on lake plains; swales

on lake plains

Slope range: 0 to 2 percent Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Till Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8

feet (August)

Ponding does not occur (months): January, February,

March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 10.1 inches

Content of organic matter in the upper 10 inches: 6.5 percent

#### Pelan and similar soils

Extent: 3 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months):

2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7

feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 7.1

inches

Content of organic matter in the upper 10 inches: 1.4

percent

### Foxhome and similar soils

Extent: 2 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Sandy loam

Depth to restrictive feature: Very deep (more than 60

inches

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months):

2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7

feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 8.3

inches

Content of organic matter in the upper 10 inches: 5.0

percent

## Management

Major uses: Cropland; pasture and hayland

For general and detailed information about managing this map unit, see the following sections:

"Agronomy" section

"Forest Land" section

"Recreation" section

• "Wildlife Habitat" section

• "Engineering" and "Soil Properties" sections

# 1414—Nereson fine sandy loam, 0 to 3 percent slopes, very cobbly

## **Component Descriptions**

## Nereson, very cobbly, and similar soils

Extent: 85 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained

Parent material: Till Flooding: None

Wet soil moisture status is highest (depth, months):

2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7

feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 10.2

inches

Content of organic matter in the upper 10 inches: 3.8

percent

## Percy, very cobbly, and similar soils

Extent: 10 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 2 percent Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Till Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 10.0 inches

Content of organic matter in the upper 10 inches: 5.4 percent

#### Pelan and similar soils

Extent: 3 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 7.1 inches

Content of organic matter in the upper 10 inches: 1.4 percent

## Foxhome and similar soils

Extent: 2 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 8.3

Content of organic matter in the upper 10 inches: 5.0 percent

## Management

Major uses: Cropland; hayland and pasture

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Forest Land" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

### Northwood Series

Drainage class: Very poorly drained

Permeability: Upper part—moderately rapid; middle

part—rapid; lower part—moderate

Landform: Lake plains

Parent material: Organic materials over glaciolacustrine deposits or till

Slope range: 0 to 1 percent

Taxonomic classification: Sandy over loamy, mixed, superactive, nonacid, frigid Histic Humaquepts

# Typical Pedon

Northwood muck, 125 feet north and 2,100 feet east of the southwest corner of sec. 23, T. 161 N., R. 42 W.

- Oa—0 to 11 inches; muck, very dark brown (10YR 2/2) broken face and rubbed; about 15 percent fiber, 8 percent rubbed; weak thin platy structure; very friable; many fine roots; neutral; clear smooth boundary.
- A—11 to 16 inches; black (10YR 2/1) mucky fine sandy loam; weak fine subangular blocky structure parting to weak very fine subangular blocky; very friable; common fine roots; neutral; clear smooth boundary.
- Bg—16 to 25 inches; light brownish gray (2.5Y 6/2) fine sand; common medium distinct light olive brown (2.5Y 5/6) and few medium prominent olive yellow (2.5Y 6/8) iron concentrations; single grain; loose; few fine roots; slightly alkaline; clear wavy boundary.
- 2Cg1—25 to 63 inches; light brownish gray (2.5Y 6/2) loam; common medium distinct light olive brown (2.5Y 5/6), few medium prominent olive yellow (2.5Y 6/8), and few fine prominent brown (7.5YR 4/4) iron concentrations; massive; friable; few fine roots; strongly effervescent; 3 percent gravel; slightly alkaline; clear wavy boundary.
- 2Cg2—63 to 68 inches; light olive gray (5Y 6/2) loam and silt loam stratified with bands of olive gray (5Y

4/2) clay <sup>1</sup>/<sub>16</sub> to <sup>1</sup>/<sub>8</sub> inch thick; common medium prominent yellowish brown (10YR 5/6) and few fine faint olive (5Y 5/3) iron concentrations; massive; friable; few fine roots; strongly effervescent; 2 percent gravel; slightly alkaline; clear wavy boundary.

2Cg3—68 to 80 inches; olive gray (5Y 5/2 and 4/2) loam and silt loam stratified with bands of olive gray (5Y 4/2) clay 1/4 to 1/2 inch thick; common medium distinct olive (5Y 5/6) and few medium distinct olive (5Y 5/4) iron concentrations; massive; firm; few fine distinct white (5Y 8/1) soft masses of lime on faces of peds; strongly effervescent; 2 percent gravel; slightly alkaline.

## Range in Characteristics

Depth to carbonates: 20 to 34 inches
Thickness of the organic material: 8 to 11 inches
Other features: Some pedons have a Cg horizon. This
horizon has colors and textures similar to those of
the Bg horizon.

#### Oa horizon:

Hue—10YR

Value—2

Chroma—1 or 2

Texture—muck

Content of wood fragments—0 to 15 percent

#### A horizon:

Hue-10YR or 5Y

Value—2 or 3

Chroma—1

Texture—loamy fine sand, fine sandy loam, loamy sand, or the mucky analogs of these textures

## Bg horizon:

Hue-2.5Y or 5Y

Value—4 or 5

Chroma—2

Texture—loamy fine sand, fine sand, or sand

## 2Cg horizon:

Hue-2.5Y or 5Y

Value—4 to 6

Chroma—2

Texture—loam, silt loam, or loam and silt loam stratified with clay

Content of rock fragments—2 to 5 percent

# 563—Northwood muck, 0 to 1 percent slopes

## **Component Descriptions**

#### Northwood and similar soils

Extent: 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits or till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 11.8

Content of organic matter in the upper 10 inches: 67.5 percent

### Grygla and similar soils

Extent: 4 percent of the unit

Geomorphic description: Flats on lake plains; swales on lake plains

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Slope range: 0 to 2 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits and till

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.1

feet (August)

Ponding does not occur (months): January, February, March, July, August, September, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 8.7 inches

Content of organic matter in the upper 10 inches: 1.8 percent

#### Berner and similar soils

Extent: 3 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits or till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May, June)

Wet soil moisture status is lowest (depth, months): 2.1 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (January, February, July, August, September, October, November, December)

Ponding is deepest (depth, months): 0.5 foot (March, April, May, June)

Available water capacity to a depth of 60 inches: 14.4 inches

Content of organic matter in the upper 10 inches: 87.5 percent

## Strandquist and similar soils

Extent: 3 percent of the unit

Geomorphic description: Flats on lake plains; swales

on lake plains Slope range: 0 to 2 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.1 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, October)

Available water capacity to a depth of 60 inches: 6.3 inches

Content of organic matter in the upper 10 inches: 3.6 percent

## Management

Major uses: Wildlife habitat and pasture

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Forest Land" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

# 1328—Northwood muck, wooded, 0 to 1 percent slopes

## **Component Descriptions**

## Northwood, wooded, and similar soils

Extent: 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits or till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.2 foot (July, August, September)

Ponding is deepest (depth, months): 0.3 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 11.9 inches

Content of organic matter in the upper 10 inches: 67.5 percent

#### Berner, wooded, and similar soils

Extent: 5 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits or till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.2 foot (July, August, September)

Ponding is deepest (depth, months): 0.3 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 13.2 inches

Content of organic matter in the upper 10 inches: 87.5 percent

## Grygla and similar soils

Extent: 5 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits and till

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.1 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 8.7 inches

Content of organic matter in the upper 10 inches: 1.8 percent

### Management

Major uses: Forest land and wildlife habitat

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Forest Land" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

### Pelan Series

Drainage class: Moderately well drained

Permeability: Upper part—rapid; lower part—moderate

Landform: Lake plains

Parent material: Glaciolacustrine deposits over till

Slope range: 0 to 3 percent

Taxonomic classification: Loamy-skeletal, mixed, superactive, frigid Oxyaquic Argiudolls

## Typical Pedon

Pelan sandy loam, 1,450 feet south and 1,500 feet east of the northwest corner of sec. 32, T. 157 N., R. 43 W., in Marshall County, Minnesota:

- Ap—0 to 6 inches; black (10YR 2/1) sandy loam, very dark gray (10YR 3/1) dry; weak very fine subangular blocky structure; very friable; few fine roots; 5 percent gravel; slightly acid; abrupt smooth boundary.
- Bt1—6 to 9 inches; brown (10YR 4/3) gravelly coarse sandy loam; moderate medium subangular blocky structure; friable; few fine roots; many very dark grayish brown (10YR 3/2) clay films on faces of peds and bridging sand grains; few fine masses of carbonates; 15 percent gravel; neutral; clear wavy boundary.
- Bt2—9 to 12 inches; very dark grayish brown (10YR 3/2) very gravelly sandy loam; weak fine subangular blocky structure; very friable; many dark brown (10YR 3/3) continuous clay films on faces of peds and bridging sand grains; few fine masses of carbonates; 50 percent gravel; slightly alkaline; clear wavy boundary.
- Bw1—12 to 16 inches; dark grayish brown (10YR 4/2) very gravelly coarse sand; single grain; loose; 40 percent gravel; slightly effervescent; slightly alkaline; clear wavy boundary.
- Bw2—16 to 24 inches; light brownish gray (2.5Y 6/2) very gravelly coarse sand; few medium distinct light yellowish brown (2.5Y 6/4) iron concentrations; single grain; loose; 40 percent gravel; slightly effervescent; slightly alkaline; clear wavy boundary.
- 2Bk—24 to 60 inches; light brownish gray (2.5Y 6/2) loam; common fine prominent light olive brown (2.5Y 5/6) and few medium prominent dark yellowish brown (10YR 4/6) iron concentrations; weak fine and medium subangular blocky structure; friable; common fine soft masses of carbonates; 5 percent gravel; strongly effervescent; slightly alkaline.

## Range in Characteristics

Depth to carbonates: 8 to 24 inches

Ap or A horizon: Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—fine sandy loam

Content of rock fragments—0 to 25 percent

#### Bt horizon:

Hue—10YR

Value-3 or 4

Chroma—2 to 4

Texture—sandy loam, coarse sandy loam, or

sandy clay loam

Content of rock fragments—35 to 65 percent

#### Bw horizon:

Hue-10YR or 2.5Y

Value—5 or 6

Chroma—2 to 4

Texture—coarse sand, sand, fine sand, loamy coarse sand, loamy sand, or loamy fine sand Content of rock fragments—35 to 65 percent

#### 2Bk horizon:

Hue-10YR or 2.5Y

Value—5 or 6

Chroma-2 to 4

Texture—fine sandy loam, sandy loam, or loam Content of rock fragments—5 to 15 percent

# 280—Pelan sandy loam, 0 to 3 percent slopes

## Component Descriptions

#### Pelan and similar soils

Extent: 85 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months):

2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7

feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 7.1

inches

Content of organic matter in the upper 10 inches: 1.4

percent

### Strandquist and similar soils

Extent: 10 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.1

feet (August)

Ponding does not occur (months): January, February,

March, July, August, September, November, December

December

Ponding is deepest (depth, months): 0.3 foot (April,

May, June, October)

Available water capacity to a depth of 60 inches: 6.3

inches

Content of organic matter in the upper 10 inches: 3.6

percent

## Garnes and similar soils

Extent: 3 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60

inches'

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits and till

Flooding: None

Wet soil moisture status is highest (depth, months):

2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7

feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 10.2

inches

Content of organic matter in the upper 10 inches: 1.2

percent

### Marquette and similar soils

Extent: 1 percent of the unit

Geomorphic description: Beach ridges

Position on the landform: Shoulders, summits

Slope range: 1 to 8 percent

Texture of the surface layer: Loamy sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Excessively drained Parent material: Beach deposits

Flooding: None

Depth to wet soil moisture status: More than 6.7 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 3.3 inches

Content of organic matter in the upper 10 inches: 1.6 percent

## Pits, gravel

Extent: 1 percent of the unit Slope range: 1 to 50 percent

Definition: Areas from which sand and gravel have

been removed

## Management

Major uses: Pasture, hayland, and forest land

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- · "Forest Land" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

## Percy Series

Drainage class: Very poorly drained and poorly

drained

Permeability: Moderate Landform: Lake plains Parent material: Till

Slope range: 0 to 2 percent

Taxonomic classification: Coarse-loamy, mixed, superactive, frigid Typic Calciaquolls

## Typical Pedon

Percy loam (fig. 9), 200 feet south and 2,500 feet east of the northwest corner of sec. 2, T. 162 N., R. 41 W.

- Ap—0 to 10 inches; black (10YR 2/1) loam, very dark gray (10YR 3/1) dry; weak fine subangular blocky structure parting to weak very fine subangular blocky; friable; many very fine and fine roots; slightly effervescent; slightly alkaline; clear smooth boundary.
- Bkg1—10 to 12 inches; grayish brown (2.5Y 5/2) loam; common fine faint light yellowish brown (2.5Y 6/3) iron concentrations; weak fine subangular blocky structure; friable; common very fine roots; few distinct discontinuous dark gray (10YR 4/1) organic coats on faces of peds; common fine

distinct white (2.5Y 8/1) soft masses of lime between peds; violently effervescent; 2 percent gravel and 2 percent cobbles; slightly alkaline; clear smooth boundary.

- Bkg2—12 to 18 inches; grayish brown (2.5Y 5/2) loam; common fine faint light yellowish brown (2.5Y 6/3) iron concentrations; weak fine subangular blocky structure; friable; common very fine roots; common fine distinct white (2.5Y 8/1) soft masses of lime between peds; violently effervescent; 2 percent gravel and 2 percent cobbles; slightly alkaline; clear wavy boundary.
- Bkg3—18 to 25 inches; light brownish gray (2.5Y 6/2) loam; many fine and medium faint light yellowish brown (2.5Y 6/3) and common fine distinct light olive brown (2.5Y 5/6) iron concentrations; weak fine subangular blocky structure; friable; common very fine roots; common fine and medium distinct pale yellow (2.5Y 8/2) soft masses of lime between peds; strongly effervescent; 5 percent gravel and 2 percent cobbles; slightly alkaline; gradual wavy boundary.
- Cg1—25 to 74 inches; light brownish gray (2.5Y 6/2) loam; many medium and coarse faint light yellowish brown (2.5Y 6/3) iron concentrations; massive; friable; common medium distinct pale yellow (2.5Y 8/2) soft masses of lime between peds; strongly effervescent; 5 percent gravel and 2 percent cobbles; slightly alkaline; gradual wavy boundary.
- Cg2—74 to 80 inches; light brownish gray (2.5Y 6/2) loam; common fine and medium distinct light olive brown (2.5Y 5/6) and common fine prominent yellowish brown (10YR 5/6) iron concentrations; massive; friable; strongly effervescent; 5 percent gravel and 2 percent cobbles; slightly alkaline.

## Range in Characteristics

Depth to carbonates: 0 to 9 inches
Thickness of the mollic epipedon: 7 to 14 inches

Ap horizon:

Hue—10YR

Value—2 or 3

Chroma—1

Texture—loam, mucky loam, or fine sandy loam Content of rock fragments—0 to 10 percent

Bkg horizon:

Hue—5Y, 2.5Y, or 10YR

Value—4 to 6

Chroma—1 or 2

Texture—fine sandy loam, loam, or sandy loam Content of rock fragments—5 to 15 percent

Cg horizon:

Hue-5Y, 2.5Y, or 10YR

Value—4 to 7 Chroma—1 or 2

Texture—fine sandy loam, loam, or sandy loam Content of rock fragments—5 to 20 percent

# 379—Percy loam, 0 to 2 percent slopes, very cobbly

# **Component Descriptions**

## Percy, very cobbly, and similar soils

Extent: 90 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 2 percent Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Till Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 10.0 inches

Content of organic matter in the upper 10 inches: 5.4 percent

#### **Boash and similar soils**

Extent: 3 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Clay loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Floodina: None

Wet soil moisture status is highest (depth, months): At

the surface (April)

Wet soil moisture status is lowest (depth, months): 3.0

feet (August)

Ponding does not occur (months): January, February, March, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, November)

Available water capacity to a depth of 60 inches: 9.6 inches

Content of organic matter in the upper 10 inches: 4.3 percent

## Strandquist and similar soils

Extent: 3 percent of the unit

Geomorphic description: Flats on lake plains; swales

on lake plains

Slope range: 0 to 2 percent Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.1

feet (August)

Ponding does not occur (months): January, February, March, July, August, September, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, October)

Available water capacity to a depth of 60 inches: 6.3 inches

Content of organic matter in the upper 10 inches: 3.6 percent

#### Haug and similar soils

Extent: 2 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 11.8 inches

Content of organic matter in the upper 10 inches: 70.0 percent

# Skagen, very cobbly, and similar soils

Extent: 2 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained

Parent material: Till Flooding: None

Wet soil moisture status is highest (depth, months):

2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7

feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 9.2

inches

Content of organic matter in the upper 10 inches: 6.5

percent

## Management

Major uses: Cropland; pasture and hayland

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

# 383—Percy loam, 0 to 2 percent slopes

# Component Descriptions

# Percy and similar soils

Extent: 90 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 2 percent
Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Till Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8

feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 10.1 inches

Content of organic matter in the upper 10 inches: 6.5

#### Boash and similar soils

Extent: 3 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Clay loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): At

the surface (April)

Wet soil moisture status is lowest (depth, months): 3.0

feet (August)

Ponding does not occur (months): January, February, March, December

Ponding is deepest (depth, months): 0.3 foot (April,

May, June, November)

Available water capacity to a depth of 60 inches: 9.6

inches

Content of organic matter in the upper 10 inches: 4.3 percent

### Strandquist and similar soils

Extent: 3 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 2 percent Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.1

feet (August)

Ponding does not occur (months): January, February, March, July, August, September, November,

December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, October)

Available water capacity to a depth of 60 inches: 6.3 inches

Content of organic matter in the upper 10 inches: 3.6 percent

## Haug and similar soils

Extent: 2 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 11.8 inches

Content of organic matter in the upper 10 inches: 70.0 percent

# Skagen and similar soils

Extent: 2 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained

Parent material: Till Flooding: None

Wet soil moisture status is highest (depth, months):

2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7

feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 9.2

nches

Content of organic matter in the upper 10 inches: 6.1 percent

### Management

Major uses: Cropland; pasture and hayland

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

# 384—Percy mucky loam, depressional, 0 to 1 percent slopes

# Component Descriptions

# Percy, depressional, and similar soils

Extent: 85 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Mucky loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained

Parent material: Till Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September, October)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, November, December)

Available water capacity to a depth of 60 inches: 10.2 inches

Content of organic matter in the upper 10 inches: 6.5 percent

## Haug and similar soils

Extent: 7 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 11.8 inches

Content of organic matter in the upper 10 inches: 70.0 percent

## Percy and similar soils

Extent: 5 percent of the unit

Geomorphic description: Flats on lake plains; swales

on lake plains

Slope range: 0 to 2 percent Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Till Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8

feet (August)

Ponding does not occur (months): January, February,

March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 10.1

inches

Content of organic matter in the upper 10 inches: 6.5 percent

## Boash and similar soils

Extent: 3 percent of the unit

Geomorphic description: Flats on lake plains; swales

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Clay loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): At

the surface (April)

Wet soil moisture status is lowest (depth, months): 3.0

feet (August)

Ponding does not occur (months): January, February,

March, December

Ponding is deepest (depth, months): 0.3 foot (April,

May, June, November)

Available water capacity to a depth of 60 inches: 9.6

inches

Content of organic matter in the upper 10 inches: 4.3 percent

## Management

Major uses: Pasture and wildlife habitat

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

# 581—Percy fine sandy loam, 0 to 1 percent slopes

# Component Descriptions

## Percy and similar soils

Extent: 90 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Till Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

" 'August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 9.6

Content of organic matter in the upper 10 inches: 6.5 percent

## Haug and similar soils

Extent: 5 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent
Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 11.8 inches

Content of organic matter in the upper 10 inches: 70.0 percent

#### Boash and similar soils

Extent: 3 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Clay loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (April)

Wet soil moisture status is lowest (depth, months): 3.0 feet (August)

Ponding does not occur (months): January, February, March, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, November)

Available water capacity to a depth of 60 inches: 9.6 inches

Content of organic matter in the upper 10 inches: 4.3 percent

# Skagen and similar soils

Extent: 2 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained

Parent material: Till Flooding: None

Wet soil moisture status is highest (depth, months):

2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 9.2 inches

Content of organic matter in the upper 10 inches: 6.1 percent

# Management

Major uses: Cropland; pasture and hayland

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

# 1030—Pits, gravel-Udipsamments complex, 1 to 50 percent slopes

# **Component Descriptions**

## Pits, gravel

Extent: 75 percent of the unit Slope range: 1 to 50 percent

Definition: Areas from which sand and gravel have

been removed

# Udipsamments and similar soils

Extent: 20 percent of the unit Slope range: 1 to 50 percent Texture of the surface layer: Sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Excessively drained

Flooding: None Ponding: None

Available water capacity to a depth of 60 inches: 4.3

inches

Content of organic matter in the upper 10 inches: 0.2

percent

#### Corliss and similar soils

Extent: 2 percent of the unit

Geomorphic description: Beach ridges

Position on the landform: Shoulders, summits,

backslopes

Slope range: 1 to 6 percent

Texture of the surface layer: Loamy sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Excessively drained Parent material: Beach deposits

Flooding: None

Depth to wet soil moisture status: More than 6.7 feet

all year

Ponding: None

Available water capacity to a depth of 60 inches: 2.9 inches

Content of organic matter in the upper 10 inches: 1.7 percent

#### Karlstad and similar soils

Extent: 2 percent of the unit

Geomorphic description: Beach ridges Position on the landform: Backslopes

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained

Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

3.0 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (July, August)

Ponding: None

Available water capacity to a depth of 60 inches: 3.2

Content of organic matter in the upper 10 inches: 2.1 percent

## Hangaard and similar soils

Extent: 1 percent of the unit

Geomorphic description: Flats on beach plains; swales

on beach plains Slope range: 0 to 2 percent

Texture of the surface layer: Sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.3 foot (April)

Wet soil moisture status is lowest (depth, months): 3.3 feet (February, August)

Ponding does not occur (months): January, February, March, July, August, September, October, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 2.9 inches

Content of organic matter in the upper 10 inches: 5.5 percent

# Management

Major use: Wildlife habitat

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Forest Land" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

# Redby Series

Drainage class: Somewhat poorly drained

Permeability: Rapid Landform: Lake plains

Parent material: Glaciolacustrine deposits

Slope range: 0 to 3 percent

Taxonomic classification: Mixed, frigid Aquic

Udipsamments

# Typical Pedon

Redby loamy fine sand (fig. 10), 800 feet south and 2,000 feet east of the northwest corner of sec. 36, T. 159 N., R. 39 W.

- A—0 to 3 inches; very dark gray (10YR 3/1) loamy fine sand, gray (10YR 5/1) dry; weak fine subangular blocky structure parting to single grain; very friable; many fine and very fine roots; strongly acid; abrupt wavy boundary.
- E—3 to 6 inches; dark grayish brown (10YR 4/2) fine sand; weak fine subangular blocky structure parting to single grain; very friable; many fine and very fine roots; slightly acid; clear wavy boundary.
- Bw1—6 to 13 inches; dark yellowish brown (10YR 4/6) fine sand; common fine prominent dark reddish brown (5YR 3/4) iron concentrations; weak fine subangular blocky structure parting to single grain; very friable; common very fine roots; slightly acid; clear wavy boundary.
- Bw2—13 to 28 inches; dark yellowish brown (10YR 4/6) fine sand; common fine prominent dark reddish brown (5YR 3/4) iron concentrations and common fine prominent light brownish gray (10YR 6/2) iron depletions; weak fine subangular blocky structure parting to single grain; very friable; slightly acid; clear wavy boundary.
- Cg1—28 to 55 inches; light brownish gray (10YR 6/2) fine sand; common fine distinct dark yellowish brown (10YR 4/6) iron concentrations; single grain; loose; neutral; gradual wavy boundary.
- Cg2—55 to 65 inches; light brownish gray (10YR 6/2) fine sand; few fine distinct dark yellowish brown (10YR 4/6) iron concentrations; single grain; loose; neutral; gradual wavy boundary.

Cg3—65 to 80 inches; light brownish gray (10YR 6/2) fine sand; single grain; loose; neutral.

# Range in Characteristics

Depth to carbonates: More than 60 inches

A or Ap horizon:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—loamy fine sand

E horizon:

Hue-10YR

Value—4 to 6

Chroma—1 to 3

Texture—fine sand

Bw horizon:

Hue—10YR

Value—4 to 6

Chroma—3 to 6

Texture—fine sand

Cg horizon:

Hue-10YR or 2.5Y

Value—5 or 6

Chroma—2 or 3

Texture—fine sand

# 116—Redby loamy fine sand, 0 to 3 percent slopes

## Component Descriptions

## Redby and similar soils

Extent: 85 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Somewhat poorly drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

1.5 feet (April)

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet (August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.8

inches

Content of organic matter in the upper 10 inches: 0.6

percent

#### Cormant and similar soils

Extent: 8 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60

inches

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.9

feet (August)

Ponding does not occur (months): January, February,

March, July, August, September, November,

December

Ponding is deepest (depth, months): 0.3 foot (April,

May)

Available water capacity to a depth of 60 inches: 4.9

inches

Content of organic matter in the upper 10 inches: 3.9

percent

## Hiwood and similar soils

Extent: 6 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 1 to 6 percent

Texture of the surface layer: Fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

2.5 feet (April)

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet (July, August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.7

inches

Content of organic matter in the upper 10 inches: 0.6

percent

# Leafriver and similar soils

Extent: 1 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 8.4 inches

Content of organic matter in the upper 10 inches: 70.0 percent

# Management

Major uses: Forest land and pasture

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Forest Land" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

# 1274B—Redby-Hiwood-Leafriver complex, 0 to 6 percent slopes

## Component Descriptions

## Redby and similar soils

Extent: 40 percent of the unit

Geomorphic description: Rises on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Somewhat poorly drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 1.5 feet (April)

Wet soil moisture status is lowest (depth, months):
More than 6.7 feet (August)

Ponding: None

Available water capacity to a depth of 60 inches: 5.0 inches

Content of organic matter in the upper 10 inches: 1.2 percent

#### Hiwood and similar soils

Extent: 30 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 1 to 6 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (July, August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.9 inches

Content of organic matter in the upper 10 inches: 1.0 percent

## Leafriver, wooded, and similar soils

Extent: 15 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 7.4 inches

Content of organic matter in the upper 10 inches: 70.0 percent

#### Clearriver and similar soils

Extent: 5 percent of the unit

Geomorphic description: Beach ridges

Position on the landform: Shoulders, backslopes

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 3.0 feet (April)

Wet soil moisture status is lowest (depth, months):
More than 6.7 feet (July, August)

Ponding: None

Available water capacity to a depth of 60 inches: 3.5

inches

Content of organic matter in the upper 10 inches: 0.5

percent

### Cormant and similar soils

Extent: 5 percent of the unit

Geomorphic description: Flats on lake plains; swales

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.9

feet (August)

Ponding does not occur (months): January, February, March, July, August, September, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 4.9 inches

Content of organic matter in the upper 10 inches: 3.9 percent

#### Zimmerman and similar soils

Extent: 5 percent of the unit

Geomorphic description: Beach ridges

Position on the landform: Shoulders, summits

Slope range: 1 to 6 percent

Texture of the surface layer: Fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Excessively drained Parent material: Beach deposits

Flooding: None

Depth to wet soil moisture status: More than 6.7 feet

all year Ponding: None

Available water capacity to a depth of 60 inches: 4.8 inches

Content of organic matter in the upper 10 inches: 0.6 percent

# Management

Major uses: Forest land and wildlife habitat

For general and detailed information about managing this map unit, see the following sections:

"Agronomy" section

· "Forest Land" section

"Recreation" section

"Wildlife Habitat" section

• "Engineering" and "Soil Properties" sections

## Rifle Series

Drainage class: Very poorly drained Permeability: Moderately rapid

Landform: Lake plains

Parent material: Organic materials

Slope range: 0 to 1 percent

Taxonomic classification: Euic, frigid Typic

Haplohemists

# Typical Pedon

Rifle mucky peat, 250 feet north and 2,400 feet west of the southeast corner of sec. 28, T. 163 N., R. 39 W.

Oep—0 to 8 inches; mucky peat, very dark brown (10YR 2/2) broken face, dark reddish brown (5YR 3/2) pressed and rubbed; about 35 percent fiber, 25 percent rubbed; weak fine granular structure; friable; slightly acid; clear smooth boundary.

Oe1—8 to 12 inches; mucky peat, brown or dark brown (7.5YR 4/2) broken face, very dark grayish brown (10YR 3/2) pressed and rubbed; about 65 percent fiber, 35 percent rubbed; weak medium granular structure; friable; moderately acid; clear smooth boundary.

Oe2—12 to 36 inches; mucky peat, dark reddish brown (5YR 2/2) broken face, pressed, and rubbed; about 75 percent fiber, 50 percent rubbed; weak medium granular structure; friable; moderately acid; clear smooth boundary.

Oe3—36 to 44 inches; mucky peat, dark reddish brown (5YR 3/2) broken face, very dark gray (5YR 3/1) pressed and rubbed; about 50 percent fiber, 20 percent rubbed; weak medium granular structure; friable; moderately acid; clear smooth boundary.

Oe4—44 to 80 inches; mucky peat, very dark gray (10YR 3/1) broken face, black (5YR 2/1) pressed and rubbed; about 30 percent fiber, 20 percent

rubbed; weak fine granular structure; friable; moderately acid.

# Range in Characteristics

Depth to carbonates: More than 51 inches Thickness of the organic material: More than 51 inches

Oep horizon:

Hue-5YR, 7.5YR, or 10YR

Value—2 or 3 Chroma—1 or 2 Texture—muck

Oe horizon:

Hue-5YR, 7.5YR, or 10YR

Value—2 to 4 Chroma—1 or 2 Texture—mucky peat

# 541—Rifle mucky peat, MAP 18-22, 0 to 1 percent slopes

# **Component Descriptions**

### Rifle and similar soils

Extent: 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Mucky peat

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials

Flooding: None

Wet soil moisture status is highest (depth, months): At

the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 1.6

feet (February, August)

Ponding is shallowest (depth, months): 0.3 foot (January, February, July, August, September, October, November, December)

Ponding is deepest (depth, months): 0.5 foot (March, April, May, June)

Available water capacity to a depth of 60 inches: 31.7 inches

Content of organic matter in the upper 10 inches: 82.0 percent

### Tacoosh and similar soils

Extent: 10 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Mucky peat

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May, June)

Wet soil moisture status is lowest (depth, months): 2.1 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (January, February, July, August, September, October, November, December)

Ponding is deepest (depth, months): 0.5 foot (March, April, May, June)

Available water capacity to a depth of 60 inches: 21.6 inches

Content of organic matter in the upper 10 inches: 87.0 percent

## Management

Major uses: Wildlife habitat, pasture, and cropland

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Forest Land" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

## Roliss Series

Drainage class: Poorly drained and very poorly

drained

Permeability: Moderately slow or moderate

Landform: Lake plains Parent material: Till

Slope range: 0 to 2 percent

Taxonomic classification: Fine-loamy, mixed,

superactive, calcareous, frigid Typic Endoaquolls

## Typical Pedon

Roliss loam, 2,350 feet west and 560 feet north of the southeast corner of sec. 15, T. 151 N., R. 39 W., in Polk County, Minnesota:

Ap—0 to 9 inches; black (10YR 2/1) loam, very dark gray (10YR 3/1) dry; few fine distinct dark yellowish brown (10YR 3/4) iron concentrations; weak medium subangular blocky structure parting to weak fine granular; friable; few very fine roots; 5 percent gravel; slightly effervescent; slightly alkaline; clear wavy boundary.

- A—9 to 14 inches; very dark gray (10YR 3/1) clay loam; few fine distinct dark yellowish brown (10YR 3/4) iron concentrations; weak medium prismatic structure parting to weak medium subangular blocky; friable; few very fine roots; 5 percent gravel; slightly effervescent; slightly alkaline; clear wavy boundary.
- Bg—14 to 20 inches; grayish brown (2.5Y 5/2) clay loam; common fine prominent strong brown (7.5YR 4/6) iron concentrations; weak medium subangular blocky structure; friable; 5 percent gravel; slightly effervescent; slightly alkaline; gradual wavy boundary.
- Cg1—20 to 45 inches; grayish brown (2.5Y 5/2) loam; common fine prominent dark yellowish brown (10YR 4/6) iron concentrations; massive; friable; few very fine roots; 5 percent gravel; slightly effervescent; slightly alkaline; clear wavy boundary.
- Cg2—45 to 59 inches; grayish brown (2.5Y 5/2) loam; common medium prominent yellowish brown (10YR 5/6) and few fine strong brown (7.5YR 5/6) iron concentrations; massive; firm; few very fine distinct white (10YR 8/1) soft masses of carbonates between peds; few fine roots; 4 percent gravel; strongly effervescent; moderately alkaline; clear wavy boundary.
- Cg3—59 to 70 inches; dark grayish brown (2.5Y 4/2) loam; common and many fine and medium prominent yellowish brown (10YR 5/6) and few fine yellowish red (5YR 5/8) iron concentrations; massive; firm; few fine distinct white (10YR 8/1) soft masses of carbonates between peds; few very fine roots; 4 percent gravel; strongly effervescent; moderately alkaline; clear wavy boundary.
- Cg4—70 to 80 inches; grayish brown (2.5Y 5/2) loam; many medium prominent yellowish brown (10YR 5/6) and few fine yellowish red (5YR 5/8) iron concentrations; massive; firm; few discontinuous distinct black (N 2/0) manganese stains on faces of peds and in pores; 3 percent gravel; strongly effervescent; moderately alkaline.

# Range in Characteristics

Thickness of the mollic epipedon: 7 to 12 inches

Ap or A horizon:

Hue—10YR or N Value—2 or 3 Chroma—0 or 1 Texture—loam

Content of rock fragments—0 to 5 percent

Bg horizon:

Hue—2.5Y or 5Y Value—4 or 5 Chroma—1 or 2

Texture—loam, clay loam, or silty clay loam Content of rock fragments—0 to 5 percent

Cg horizon:

Hue—2.5Y or 5Y Value—4 to 6 Chroma—2 or 3

Texture—loam, clay loam, or silty clay loam Content of rock fragments—2 to 10 percent

# 387—Roliss loam, depressional, 0 to 1 percent slopes

# Component Descriptions

# Roliss, depressional, and similar soils

Extent: 85 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained

Parent material: Till Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September, October)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, November, December)

Available water capacity to a depth of 60 inches: 10.5 inches

Content of organic matter in the upper 10 inches: 4.8 percent

## Haug and similar soils

Extent: 10 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 11.8 inches

Content of organic matter in the upper 10 inches: 70.0 percent

# Roliss soils that are not in depressions

Extent: 5 percent of the unit

Geomorphic description: Flats on lake plains; swales

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Till Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 10.7 inches

Content of organic matter in the upper 10 inches: 5.0 percent

#### Management

Major uses: Pasture and wildlife habitat

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

# 582—Roliss loam, 0 to 2 percent slopes

# Component Descriptions

#### Roliss and similar soils

Extent: 85 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Till Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 10.7 inches

Content of organic matter in the upper 10 inches: 5.0 percent

## Roliss, depressional, and similar soils

Extent: 7 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Till Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September, October)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, November, December)

Available water capacity to a depth of 60 inches: 10.5 inches

Content of organic matter in the upper 10 inches: 4.8 percent

#### Boash and similar soils

Extent: 5 percent of the unit

Geomorphic description: Flats on lake plains; swales

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Clay loam

Depth to restrictive feature: Very deep (more than 60 inches)

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (April)

Wet soil moisture status is lowest (depth, months): 3.0 feet (August)

Ponding does not occur (months): January, February, March, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, November)

Available water capacity to a depth of 60 inches: 9.6 inches

Content of organic matter in the upper 10 inches: 4.3 percent

## Haug and similar soils

Extent: 3 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained Parent material: Organic materials over till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 11.8 inches

Content of organic matter in the upper 10 inches: 70.0 percent

## Management

Major uses: Cropland; pasture and hayland

For general and detailed information about managing this map unit, see the following sections:

- · "Agronomy" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

## Rosewood Series

Drainage class: Poorly drained

Permeability: Upper part—moderately rapid; lower

part—rapid Landform: Lake plains

Parent material: Glaciolacustrine deposits

Slope range: 0 to 2 percent

Taxonomic classification: Sandy, mixed, frigid Typic

Calciaquolls

# Typical Pedon

Rosewood fine sandy loam, 2,600 feet north and 650 feet west of the southeast corner of sec. 29, T. 159 N., R. 39 W.

Ap—0 to 11 inches; black (10YR 2/1) fine sandy loam, very dark gray (10YR 3/1) dry; weak fine subangular blocky structure; friable; few very fine roots; slightly effervescent; slightly alkaline; abrupt smooth boundary.

Bkg—11 to 19 inches; dark gray (10YR 4/1) fine sandy loam; few fine distinct brown (10YR 4/3) iron concentrations; weak fine subangular blocky structure; friable; violently effervescent; moderately alkaline; abrupt smooth boundary.

Cg1—19 to 41 inches; light brownish gray (2.5Y 6/2) fine sand; many medium prominent dark yellowish brown (10YR 4/6) iron concentrations; single grain; loose; slightly effervescent; moderately alkaline; clear wavy boundary.

Cg2—41 to 50 inches; light brownish gray (2.5Y 6/2) fine sand; few fine prominent dark yellowish brown (10YR 4/6) and many medium distinct light olive brown (2.5Y 5/6) iron concentrations; single grain; loose; slightly alkaline; clear wavy boundary.

Cg3—50 to 65 inches; light brownish gray (2.5Y 6/2) fine sand; common medium distinct light olive brown (2.5Y 5/6) iron concentrations; single grain; loose; slightly alkaline; clear wavy boundary.

Cg4—65 to 73 inches; grayish brown (2.5Y 5/2) fine sand; few fine prominent dark yellowish brown (10YR 4/6) iron concentrations; single grain; loose; very slightly effervescent; 9 percent gravel; slightly alkaline; clear wavy boundary.

Cg5—73 to 80 inches; grayish brown (2.5Y 5/2) fine sand; few medium prominent dark yellowish brown (10YR 4/6) iron concentrations; single grain; loose; slightly alkaline.

#### Range in Characteristics

Thickness of the mollic epipedon: 7 to 12 inches

Ap horizon:

Hue-10YR or N

Value—2

Chroma—0 or 1

Texture—fine sandy loam

Content of rock fragments—0 to 5 percent

Bkg horizon:

Hue-10YR, 2.5Y, or 5Y

Value—4 to 6

Chroma—1 or 2

Texture—loamy sand, loamy fine sand, fine sand,

or fine sandy loam

Content of rock fragments—0 to 5 percent

Cg horizon:

Hue-2.5Y or 5Y

Value—5 to 7

Chroma—2

Texture—fine sand, sand, or coarse sand

Content of rock fragments—0 to 10 percent

# 712—Rosewood fine sandy loam, 0 to 2 percent slopes

# Component Descriptions

#### Rosewood and similar soils

Extent: 85 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Floodina: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.9

feet (August)

Ponding does not occur (months): January, February,

March, July, August, September, November,

December

Ponding is deepest (depth, months): 0.3 foot (April,

May)

Available water capacity to a depth of 60 inches: 5.7

inches

Content of organic matter in the upper 10 inches: 5.5

percent

## Deerwood and similar soils

Extent: 6 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained

Parent material: Organic materials over

glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At

the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5

feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July,

August, September)

Ponding is deepest (depth, months): 0.5 foot (January,

February, March, April, May, June, October,

November, December)

Available water capacity to a depth of 60 inches: 8.1

inches

Content of organic matter in the upper 10 inches: 70.0

percent

# Hangaard and similar soils

Extent: 5 percent of the unit

Geomorphic description: Swales on beach plains; flats

on beach plains

Slope range: 0 to 2 percent

Texture of the surface layer: Sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

0.3 foot (April)

Wet soil moisture status is lowest (depth, months): 3.3

feet (February, August)

Ponding does not occur (months): January, February,

March, July, August, September, October,

November, December

Ponding is deepest (depth, months): 0.3 foot (April,

May)

Available water capacity to a depth of 60 inches: 2.9

inches

Content of organic matter in the upper 10 inches: 5.5

percent

#### Ulen and similar soils

Extent: 4 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.0 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (August)

Ponding: None

Available water capacity to a depth of 60 inches: 5.1

Content of organic matter in the upper 10 inches: 3.5 percent

# Management

Major uses: Cropland and pasture

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

# 1181—Rosewood-Ulen complex, 0 to 2 percent slopes

# **Component Descriptions**

#### Rosewood and similar soils

Extent: 50 percent of the unit

Geomorphic description: Flats on lake plains; swales

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.9 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, October)

Available water capacity to a depth of 60 inches: 5.3 inches

Content of organic matter in the upper 10 inches: 4.8 percent

#### Ulen and similar soils

Extent: 40 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.0 feet (April)

Wet soil moisture status is lowest (depth, months):
More than 6.7 feet (August)

Ponding: None

Available water capacity to a depth of 60 inches: 5.2 inches

Content of organic matter in the upper 10 inches: 3.5 percent

## Redby and similar soils

Extent: 5 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Somewhat poorly drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 1.5 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.8 inches

Content of organic matter in the upper 10 inches: 0.6 percent

#### Deerwood and similar soils

Extent: 3 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 8.1 inches

Content of organic matter in the upper 10 inches: 70.0 percent

## Syrene and similar soils

Extent: 2 percent of the unit

Geomorphic description: Swales on beach plains; flats on beach plains

Slope range: 0 to 2 percent

Texture of the surface layer: Sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.3 foot (April)

Wet soil moisture status is lowest (depth, months): 3.3 feet (February, August)

Ponding does not occur (months): January, February, March, July, August, September, October, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 4.3 inches

Content of organic matter in the upper 10 inches: 5.5 percent

# Management

Major uses: Cropland and pasture

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Forest Land" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

## Rushlake Series

Drainage class: Moderately well drained

Permeability: Rapid Landform: Beach plains

Parent material: Beach deposits

Slope range: 0 to 3 percent
Taxonomic classification: Mixed, frigid Aquic
Udipsamments

# Typical Pedon

Rushlake loamy sand, 800 feet north and 2,625 feet west of the southeast corner of sec. 6, T. 159 N., R. 41 W.

- Ap—0 to 8 inches; very dark gray (10YR 3/1) loamy sand, dark gray (10YR 4/1) dry; single grain; loose; many fine roots; 3 percent gravel; slightly alkaline; clear smooth boundary.
- C1—8 to 16 inches; brown (10YR 5/3) gravelly loamy sand, pale brown (10YR 6/3) dry; few medium distinct light yellowish brown (2.5Y 6/4) iron concentrations; single grain; loose; 10 percent gravel; 20 percent cobbles; slightly effervescent; slightly alkaline; gradual wavy boundary.
- C2—16 to 25 inches; grayish brown (2.5Y 5/2) gravelly loamy sand; few medium distinct light yellowish brown (2.5Y 6/4) iron concentrations; single grain; loose; 25 percent gravel; 5 percent cobbles; slightly effervescent; slightly alkaline; gradual wavy boundary.
- C3—25 to 40 inches; light brownish gray (2.5Y 6/2) gravelly sand; common medium distinct light yellowish brown (2.5Y 6/4) and few fine distinct olive yellow (2.5Y 6/6) iron concentrations; single grain; loose; 25 percent gravel; 5 percent cobbles; slightly effervescent; slightly alkaline; gradual wavy boundary.
- C4—40 to 58 inches; grayish brown (2.5Y 5/2) gravelly sand; common medium distinct light yellowish brown (2.5Y 6/4) and few fine distinct yellowish brown (10YR 5/6) iron concentrations; single grain; loose; 20 percent gravel; 8 percent cobbles; strongly effervescent; slightly alkaline; gradual wavy boundary.
- C5—58 to 72 inches; light brownish gray (2.5Y 6/2) sand; many medium distinct olive yellow (2.5Y 6/6) and few fine distinct light olive brown (2.5Y 5/6) iron concentrations; single grain; loose; 1 percent gravel; 3 percent cobbles; slightly effervescent; slightly alkaline; clear wavy boundary.
- C6—72 to 80 inches; light brownish gray (2.5Y 6/2) sand; few fine distinct light yellowish brown (2.5Y 6/4) and light olive brown (2.5Y 5/6) iron concentrations; single grain; loose; 1 percent gravel; slightly effervescent; slightly alkaline.

# Range in Characteristics

Depth to carbonates: 0 to 20 inches

Ap horizon:

Hue-10YR

Value-2 or 3

Chroma—1 to 3

Texture—loamy sand

Content of rock fragments—0 to 10 percent

C horizon:

Hue-10YR or 2.5Y

Value—4 to 6

Chroma—2 to 4

Texture—coarse sand, sand, or loamy sand Content of rock fragments—5 to 35 percent

# 708—Rushlake loamy sand, 0 to 3 percent slopes

# **Component Descriptions**

#### Rushlake and similar soils

Extent: 85 percent of the unit

Geomorphic description: Rises on beach plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained

Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

3.0 feet (April)

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet (July, August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.0

inches

Content of organic matter in the upper 10 inches: 1.9

percent

## Corliss and similar soils

Extent: 6 percent of the unit

Geomorphic description: Beach ridges

Position on the landform: Shoulders, summits,

backslopes

Slope range: 1 to 6 percent

Texture of the surface layer: Loamy sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Excessively drained

Parent material: Beach deposits

Flooding: None

Depth to wet soil moisture status: More than 6.7 feet

all year

Ponding: None

Available water capacity to a depth of 60 inches: 2.9

inches

Content of organic matter in the upper 10 inches: 1.7

percent

## Redby and similar soils

Extent: 5 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Somewhat poorly drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

1.5 feet (April)

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet (August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.8

inches

Content of organic matter in the upper 10 inches: 0.6

percent

### Hangaard and similar soils

Extent: 3 percent of the unit

Geomorphic description: Flats on beach plains; swales

on beach plains

Slope range: 0 to 2 percent

Texture of the surface layer: Sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

0.3 foot (April)

Wet soil moisture status is lowest (depth, months): 3.3

feet (February, August)

Ponding does not occur (months): January, February,

March, July, August, September, October,

November, December

Ponding is deepest (depth, months): 0.3 foot (April,

May)

Available water capacity to a depth of 60 inches: 2.9

inches

Content of organic matter in the upper 10 inches: 5.5

percent

### Pits, gravel

Extent: 1 percent of the unit Slope range: 1 to 50 percent

Definition: Areas from which sand and gravel have been removed

## Management

Major uses: Pasture, hayland, and cropland

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Forest Land" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

# Sago Series

Drainage class: Very poorly drained

Permeability: Moderate Landform: Lake plains

Parent material: Organic materials over

glaciolacustrine deposits Slope range: 0 to 1 percent

Taxonomic classification: Coarse-loamy, mixed, superactive, nonacid, frigid Histic Humaquepts

# Typical Pedon

Sago muck, 800 feet north and 1,700 feet west of the southeast corner of sec. 11, T. 163 N., R. 37 W.

- Oa—0 to 14 inches; muck, black (10YR 2/1) broken faced and rubbed; about 10 percent fiber, 2 percent rubbed; weak thin platy structure parting to weak fine granular; very friable; common fine and very fine roots; 3 percent wood fragments; slightly acid; abrupt smooth boundary.
- A—14 to 17 inches; black (10YR 2/1) fine sandy loam; weak fine subangular blocky structure; friable; few fine and very fine roots; neutral; clear smooth boundary.
- Bg—17 to 29 inches; grayish brown (2.5Y 5/2) very fine sandy loam; common fine distinct brownish yellow (10YR 6/8) iron concentrations; weak fine and medium subangular blocky structure; friable; few very fine roots; many distinct discontinuous dark gray (5Y 4/1) organic coats on faces of peds and in pores; neutral; gradual wavy boundary.
- Cg1—29 to 49 inches; light brownish gray (2.5Y 6/2) very fine sand; many medium distinct brownish yellow (10YR 6/8) iron concentrations; massive; very friable; slightly effervescent; slightly alkaline; clear wavy boundary.
- Cg2—49 to 58 inches; light gray (2.5Y 7/2) silt loam; many coarse distinct light yellowish brown (2.5Y 6/4) and common fine distinct yellowish brown

(10YR 5/6) iron concentrations; massive; friable; slightly effervescent; slightly alkaline; gradual wavy boundary.

Cg3—58 to 80 inches; stratified grayish brown (2.5Y 5/2) very fine sand and light gray (2.5Y 7/2) silt loam; common fine distinct yellowish brown (10YR 5/6) iron concentrations; massive; friable or very friable; slightly effervescent; slightly alkaline.

# Range in Characteristics

Thickness of the organic material: 8 to 16 inches

Oa horizon:

Hue-10YR

Value—2

Chroma—1

Texture—muck

A horizon:

Hue-10YR

Value—2

Chroma—1

Texture—fine sandy loam, loam, or silt loam

Bg horizon:

Hue—2.5Y

Value—4 or 5

Chroma—2

Texture—very fine sandy loam or silt loam

Cg horizon:

Hue-2.5Y

Value—5 to 7

Chroma—2

Texture—very fine sandy loam, silt loam, or very fine sand

## 532—Sago muck, 0 to 1 percent slopes

# Component Descriptions

### Sago and similar soils

Extent: 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over

glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At

the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 13.4 inches

Content of organic matter in the upper 10 inches: 72.5 percent

## Cathro and similar soils

Extent: 5 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits or till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May, June)

Wet soil moisture status is lowest (depth, months): 2.1 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (January, February, July, August, September, October, November, December)

Ponding is deepest (depth, months): 0.5 foot (March, April, May, June)

Available water capacity to a depth of 60 inches: 19.8 inches

Content of organic matter in the upper 10 inches: 72.5 percent

## Zippel and similar soils

Extent: 5 percent of the unit

Geomorphic description: Flats on lake plains; swales on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Very fine sandy loam Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June)

Available water capacity to a depth of 60 inches: 10.9 inches

Content of organic matter in the upper 10 inches: 4.0 percent

# Management

Major uses: Pasture and wildlife habitat

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

# Sahkahtay Series

Drainage class: Poorly drained

Permeability: Upper part—moderate; lower part—very

rapid

Landform: Beach plains

Parent material: Beach deposits Slope range: 0 to 2 percent

Taxonomic classification: Fine-loamy over sandy or sandy-skeletal, mixed, superactive, frigid Mollic Endoagualfs

# Typical Pedon

Sahkahtay sandy loam, 100 feet south and 1,200 feet west of the northeast corner of sec. 2, T. 157 N., R. 43 W., in Marshall County, Minnesota:

- A—0 to 4 inches; black (10YR 2/1) sandy loam, very dark gray (10YR 3/1) dry; weak medium granular structure; friable; many very fine roots; neutral; abrupt smooth boundary.
- Eg—4 to 8 inches; dark grayish brown (10YR 4/2) loamy sand; common fine faint brown (10YR 5/3) iron concentrations; loose; common very fine roots; 5 percent gravel; neutral; clear wavy boundary.
- Btg—8 to 14 inches; dark grayish brown (10YR 4/2) sandy clay loam; common fine distinct yellowish brown (10YR 5/6) iron concentrations; moderate fine angular blocky structure; firm; common fine roots; few distinct discontinuous very dark grayish brown (10YR 3/2) clay films on faces of peds and in pores; 5 percent gravel; neutral; gradual smooth boundary.
- 2Cg1—14 to 18 inches; dark grayish brown (10YR 4/2) loamy coarse sand; common fine faint olive brown (2.5Y 4/4) iron concentrations; weak fine subangular blocky structure; very friable; common

very fine roots; 10 percent gravel; slightly alkaline; gradual smooth boundary.

- 2Cg2—18 to 30 inches; dark grayish brown (2.5Y 4/2) gravelly coarse sand; common fine distinct light olive brown (2.5Y 5/6) iron concentrations; single grain; loose; slightly effervescent; 30 percent gravel; slightly alkaline; gradual smooth boundary.
- 2Cg3—30 to 63 inches; grayish brown (10YR 5/2) gravelly coarse sand; common fine distinct light olive brown (2.5Y 5/6) iron concentrations; single grain; loose; strongly effervescent; 30 percent gravel; slightly alkaline; gradual wavy boundary.
- 2Cg4—63 to 80 inches; grayish brown (2.5Y 5/2) gravelly sand; common fine faint light olive brown (2.5Y 5/3) and common fine distinct light olive brown (2.5Y 5/6) iron concentrations; single grain; loose; strongly effervescent; 20 percent gravel; moderately alkaline.

# Range in Characteristics

Depth to carbonates: 14 to 30 inches
Thickness of the ochric epipedon: 4 to 7 inches

#### A horizon:

Hue—10YR Value—2 or 3 Chroma—1 or 2

Texture—sandy loam

Content of rock fragments—0 to 15 percent

#### Eq horizon:

Hue—10YR Value—4 to 6

Chroma—2

Texture—loamy sand or sand

Content of rock fragments—2 to 5 percent

### Btg horizon:

Hue-10YR or 2.5Y

Value—4 Chroma—2

Texture—sandy loam or sandy clay loam Content of rock fragments—2 to 5 percent

## 2Cg horizon:

Hue-10YR or 2.5Y

Value—4 to 6

Chroma—2 or 3

Texture—sand, coarse sand, or loamy coarse sand

Content of rock fragments—average of 10 to 35 percent; less than 10 percent or more than 35 percent in some subhorizons

# 1191—Sahkahtay sandy loam, 0 to 2 percent slopes

# **Component Descriptions**

## Sahkahtay and similar soils

Extent: 85 percent of the unit

Geomorphic description: Swales on beach plains; flats

on beach plains Slope range: 0 to 2 percent

Texture of the surface layer: Sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.3 foot (April)

Wet soil moisture status is lowest (depth, months): 3.3 feet (February, August)

Ponding does not occur (months): January, February, March, July, August, September, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 4.0 inches

Content of organic matter in the upper 10 inches: 1.6 percent

#### Cormant and similar soils

Extent: 5 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.9 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 4.9 inches

Content of organic matter in the upper 10 inches: 3.9 percent

#### Deerwood and similar soils

Extent: 5 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 8.1 inches

Content of organic matter in the upper 10 inches: 70.0 percent

#### Karlstad and similar soils

Extent: 3 percent of the unit

Geomorphic description: Beach ridges Position on the landform: Backslopes

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained

Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 3.0 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (July, August)

Ponding: None

Available water capacity to a depth of 60 inches: 3.2 inches

Content of organic matter in the upper 10 inches: 2.1 percent

## Redby and similar soils

Extent: 2 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Somewhat poorly drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 1.5 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.8 inches

Content of organic matter in the upper 10 inches: 0.6 percent

# Management

Major uses: Forest land and pasture

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Forest Land" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

### Sax Series

Drainage class: Very poorly drained

Permeability: Upper part—moderate; lower part—

moderately slow Landform: Lake plains

Parent material: Organic materials over

glaciolacustrine deposits Slope range: 0 to 1 percent

Taxonomic classification: Fine-silty, mixed,

superactive, nonacid, frigid Histic Humaquepts

## Typical Pedon

Sax muck, 150 feet south and 400 feet east of the northwest corner of sec. 4, T. 162 N., R. 38 W.

Oa—0 to 15 inches; muck, black (10YR 2/1) broken face and rubbed; about 5 percent fiber, 2 percent rubbed; weak fine subangular blocky structure parting to weak very fine subangular blocky; very friable; many fine and many very fine roots; neutral; clear wavy boundary.

A—15 to 24 inches; black (N 2/0) mucky silt loam; weak fine subangular blocky structure; friable; many fine roots; neutral; clear smooth boundary.

Bg—24 to 39 inches; olive gray (5Y 5/2) silty clay loam; few fine prominent strong brown (7.5YR 4/6) iron concentrations; moderate coarse subangular blocky structure; friable; common fine roots; few

distinct discontinuous light gray (5Y 7/2) carbonate coats on faces of peds; strongly effervescent; slightly alkaline; gradual wavy boundary.

- Cg1—39 to 48 inches; olive gray (5Y 5/2) silty clay loam; common medium distinct light olive brown (2.5Y 5/6) and few fine prominent strong brown (7.5YR 4/6) iron concentrations; massive; friable; common fine roots; few distinct discontinuous light gray (5Y 7/2) carbonate coats on faces of peds; strongly effervescent; slightly alkaline; gradual wavy boundary.
- Cg2—48 to 64 inches; olive gray (5Y 5/2) silty clay loam; common medium prominent yellowish brown (10YR 5/6) and common fine and medium distinct light olive brown (2.5Y 5/6) iron concentrations; massive; friable; common very fine and fine roots; few distinct discontinuous light gray (5Y 7/2) carbonate coats on faces of peds; strongly effervescent; slightly alkaline; gradual wavy boundary.
- Cg3—64 to 71 inches; light olive gray (5Y 6/2) silt loam; common fine prominent yellowish brown (10YR 5/6) and common fine distinct olive yellow (2.5Y 6/6) iron concentrations; massive; friable; few distinct discontinuous light gray (5Y 7/2) carbonate coats on faces of peds; strongly effervescent; slightly alkaline; clear wavy boundary.
- Cg4—71 to 80 inches; stratified dark gray (5Y 4/1) clay and light olive gray (5Y 6/2) silt loam; common fine prominent yellowish brown (10YR 5/6) and few fine prominent dark yellowish brown (10YR 4/4) iron concentrations; massive; firm; few distinct discontinuous light gray (5Y 7/2) carbonate coats on faces of peds; slightly effervescent; slightly alkaline.

# Range in Characteristics

Depth to carbonates: 24 to 28 inches
Thickness of the organic material: 8 to 16 inches

Oa horizon:

Hue—10YR

Value—2

Chroma—1

Texture—muck

A horizon:

Hue-10YR, 2.5Y, or N

Value—2 or 3

Chroma—0 or 1

Texture—silt loam, silty clay loam, mucky silt loam, or mucky silty clay loam

Bg horizon:

Hue-2.5Y or 5Y

Value—4 to 6

Chroma—2

Texture—silt loam or silty clay loam

Cg horizon:

Hue-2.5Y or 5Y

Value—4 to 6

Chroma—1 or 2

Texture—silt loam or silty clay loam

# 1154—Sax muck, 0 to 1 percent slopes

# Component Descriptions

## Sax and similar soils

Extent: 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits

Floodina: None

Wet soil moisture status is highest (depth, months): At

the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5

feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 14.5 inches

Content of organic matter in the upper 10 inches: 47.5 percent

## Wabanica and similar soils

Extent: 5 percent of the unit

Geomorphic description: Flats on lake plains; swales

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Silt loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8

feet (August)

Ponding does not occur (months): January, February, March, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, July, September, October, November)

Available water capacity to a depth of 60 inches: 12.0

inches

Content of organic matter in the upper 10 inches: 2.5 percent

#### Cathro and similar soils

Extent: 3 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits or till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May, June)

Wet soil moisture status is lowest (depth, months): 2.1 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (January, February, July, August, September, October, November, December)

Ponding is deepest (depth, months): 0.5 foot (March, April, May, June)

Available water capacity to a depth of 60 inches: 19.8 inches

Content of organic matter in the upper 10 inches: 72.5 percent

## Woodslake and similar soils

Extent: 2 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Clay

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 1.6 feet (February, August)

Ponding depth: 0.5 foot all year

Available water capacity to a depth of 60 inches: 7.9

Content of organic matter in the upper 10 inches: 3.4 percent

# Management

Major uses: Wildlife habitat and pasture

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

# Seelyeville Series

Drainage class: Very poorly drained

Permeability: Moderately slow to moderately rapid

Landform: Lake plains

Parent material: Organic materials Slope range: 0 to 1 percent

Taxonomic classification: Euic, frigid Typic

Haplosaprists

# Typical Pedon

Seelyeville muck, 2,000 feet south and 200 feet west of the northeast corner of sec. 16, T. 163 N., R. 38 W.

Oa1—0 to 12 inches; muck, black (10YR 2/1) broken face and rubbed; about 20 percent fiber, 5 percent rubbed; weak fine granular structure; very friable; many very fine and fine roots; neutral; clear smooth boundary.

Oa2—12 to 42 inches; muck, black (10YR 2/1) broken face and rubbed; about 25 percent fiber, 10 percent rubbed; weak fine subangular blocky structure; very friable; many very fine roots; neutral; clear smooth boundary.

Oa3—42 to 62 inches; muck, black (10YR 2/1) broken face and rubbed; about 20 percent fiber, 5 percent rubbed; weak fine subangular blocky structure; very friable; common very fine roots; neutral; clear smooth boundary.

Oa4—62 to 76 inches; muck, black (10YR 2/1) broken face and rubbed; about 5 percent fiber, 2 percent rubbed; massive; very friable; neutral; abrupt smooth boundary.

Cg—76 to 80 inches; very dark gray (N 3/0) silty clay; common medium faint dark gray (N 4/0) iron depletions; massive; firm; slightly effervescent; neutral.

## Range in Characteristics

Depth to carbonates: More than 51 inches
Thickness of the organic material: More than 51 inches

Other features: Some pedons have a Cg horizon at a depth of more than 51 inches.

Oa horizon:

Hue—10YR Value—2 or 3 Chroma—1 or 2 Texture—muck

# 540—Seelyeville muck, 0 to 1 percent slopes

# **Component Descriptions**

## Seelyeville and similar soils

Extent: 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

nches)

Drainage class: Very poorly drained Parent material: Organic materials

Flooding: None

Wet soil moisture status is highest (depth, months): At

the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 1.6

feet (February, August)

Ponding is shallowest (depth, months): 0.3 foot (January, February, July, August, September, October, November, December)

Ponding is deepest (depth, months): 0.5 foot (March, April, May, June)

Available water capacity to a depth of 60 inches: 23.9 inches

Content of organic matter in the upper 10 inches: 62.0 percent

### Cathro and similar soils

Extent: 0 to 10 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits or till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May, June)

Wet soil moisture status is lowest (depth, months): 2.1 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (January, February, July, August, September, October, November, December)

Ponding is deepest (depth, months): 0.5 foot (March, April, May, June)

Available water capacity to a depth of 60 inches: 19.8 inches

Content of organic matter in the upper 10 inches: 72.5 percent

#### Dora and similar soils

Extent: 0 to 10 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May, June)

Wet soil moisture status is lowest (depth, months): 2.1 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (January, February, July, August, September, October, November, December)

Ponding is deepest (depth, months): 0.5 foot (March, April, May, June)

Available water capacity to a depth of 60 inches: 18.3 inches

Content of organic matter in the upper 10 inches: 55.5 percent

## Markey and similar soils

Extent: 0 to 10 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

ncnes) nage class:Verv

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May, June)

Wet soil moisture status is lowest (depth, months): 2.1 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (January, February, July, August, September, October, November, December) Ponding is deepest (depth, months): 0.5 foot (March, April, May, June)

Available water capacity to a depth of 60 inches: 17.9 inches

Content of organic matter in the upper 10 inches: 70.0 percent

## Management

Major uses: Wildlife habitat and pasture

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

# 1031—Seelyeville muck, ponded, 0 to 1 percent slopes

# Component Descriptions

# Seelyeville, ponded, and similar soils

Extent: 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials

Flooding: None

Wet soil moisture status: At the surface all year

Ponding depth: 1.0 foot all year

Available water capacity to a depth of 60 inches: 23.9

inches

Content of organic matter in the upper 10 inches: 62.0

percent

## Cathro and similar soils

Extent: 0 to 10 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits or till

Flooding: None

Wet soil moisture status is highest (depth, months): At

the surface (March, April, May, June)

Wet soil moisture status is lowest (depth, months): 2.1 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (January, February, July, August, September, October, November, December)

Ponding is deepest (depth, months): 0.5 foot (March, April, May, June)

Available water capacity to a depth of 60 inches: 19.8 inches

Content of organic matter in the upper 10 inches: 72.5 percent

#### Dora and similar soils

Extent: 0 to 10 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At

the surface (March, April, May, June)

Wet soil moisture status is lowest (depth, months): 2.1

feet (February)

Ponding is shallowest (depth, months): 0.3 foot (January, February, July, August, September, October, November, December)

Ponding is deepest (depth, months): 0.5 foot (March, April, May, June)

Available water capacity to a depth of 60 inches: 18.3 inches

Content of organic matter in the upper 10 inches: 55.5 percent

## Markey and similar soils

Extent: 0 to 10 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At

the surface (March, April, May, June)

Wet soil moisture status is lowest (depth, months): 2.1 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (January, February, July, August, September, October, November, December)

Ponding is deepest (depth, months): 0.5 foot (March, April, May, June)

Available water capacity to a depth of 60 inches: 17.9 inches

Content of organic matter in the upper 10 inches: 70.0 percent

# Management

Major uses: Wildlife habitat

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Recreation" section
- · "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

# Skagen Series

Drainage class: Moderately well drained

Permeability: Moderate Landform: Lake plains Parent material: Till

Slope range: 0 to 3 percent

Taxonomic classification: Coarse-loamy, mixed, superactive, frigid Aquic Calciudolls

## Typical Pedon

Skagen loam, 1,100 feet south and 2,450 feet west of the northeast corner of sec. 34, T. 161 N., R. 42 W.

Ap—0 to 9 inches; black (10YR 2/1) loam, very dark grayish brown (10YR 3/2) dry; weak medium subangular blocky structure parting to weak fine subangular blocky; friable; few fine roots; slightly effervescent; 3 percent gravel; slightly alkaline; clear smooth boundary.

Bk1—9 to 15 inches; light brownish gray (10YR 6/2) loam; weak medium subangular blocky structure parting to weak fine subangular blocky; friable; few fine roots; violently effervescent; 3 percent gravel; slightly alkaline; gradual wavy boundary.

Bk2—15 to 19 inches; light brownish gray (10YR 6/2) loam; common medium distinct light yellowish brown (2.5Y 6/4) and few fine distinct light olive brown (2.5Y 5/6) iron concentrations; weak medium subangular blocky structure parting to weak fine subangular blocky; friable; few fine roots; violently effervescent; 3 percent gravel; moderately alkaline; clear wavy boundary.

C1—19 to 42 inches; light yellowish brown (2.5Y 6/4) loam; common coarse prominent yellowish brown (10YR 5/6) and few medium prominent strong brown (7.5YR 5/6) iron concentrations; massive; friable; common fine and medium white (10YR 8/1) soft masses of lime between peds; strongly effervescent; 5 percent gravel; moderately alkaline; gradual wavy boundary.

C2—42 to 80 inches; light yellowish brown (2.5Y 6/4) loam; common medium prominent brownish yellow (10YR 6/6) and few fine prominent strong brown (7.5YR 5/6) iron concentrations; massive; friable; common fine and medium white (10YR 8/1) soft masses of lime between peds; strongly effervescent; 5 percent gravel; moderately alkaline.

# Range in Characteristics

Thickness of the mollic epipedon: 7 to 10 inches

Ap horizon:

Hue—10YR Value—2 or 3 Chroma—1 or 2 Texture—loam

Content of rock fragments—0 to 10 percent

Bk horizon:

Hue—10YR or 2.5Y Value—5 or 6

Chroma—1 to 4

Texture—loam, fine sandy loam, or sandy loam Content of rock fragments—5 to 15 percent

C horizon:

Hue-2.5Y

Value—5 or 6

Chroma-2 to 4

Texture—loam or fine sandy loam

Content of rock fragments—5 to 15 percent

# 1158—Skagen loam, 0 to 3 percent slopes

# Component Descriptions

# Skagen and similar soils

Extent: 85 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained

Parent material: Till

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 9.2

Content of organic matter in the upper 10 inches: 6.1 percent

## Percy and similar soils

Extent: 10 percent of the unit

Geomorphic description: Flats on lake plains; swales

on lake plains

Slope range: 0 to 2 percent Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Till Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 10.1 inches

Content of organic matter in the upper 10 inches: 6.5 percent

## Foxhome and similar soils

Extent: 5 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 8.3

Content of organic matter in the upper 10 inches: 5.0 percent

# Management

Major uses: Cropland; pasture and hayland

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

# 1170—Skagen loam, 0 to 3 percent slopes, very cobbly

# Component Descriptions

# Skagen, very cobbly, and similar soils

Extent: 85 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained

Parent material: Till Flooding: None

Wet soil moisture status is highest (depth, months):

2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7

feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 9.2

inches

Content of organic matter in the upper 10 inches: 6.5 percent

Percy, very cobbly, and similar soils

Extent: 10 percent of the unit

Geomorphic description: Flats on lake plains; swales

on lake plains

Slope range: 0 to 2 percent Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Till Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 10.0 inches

Content of organic matter in the upper 10 inches: 5.4 percent

#### Foxhome and similar soils

Extent: 5 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 8.3 inches

Content of organic matter in the upper 10 inches: 5.0 percent

# Management

Major uses: Cropland; pasture and hayland

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

## Skime Series

Drainage class: Moderately well drained Permeability: Moderately rapid or rapid

Landform: Lake plains

Parent material: Glaciolacustrine deposits

Slope range: 0 to 4 percent

Taxonomic classification: Coarse-loamy, mixed, superactive, frigid Oxyaquic Hapludalfs

### Typical Pedon

Skime loamy fine sand, 2,600 feet south and 800 feet west of the northeast corner of sec. 31, T. 161 N., R. 38 W.

Ap—0 to 6 inches; dark grayish brown (10YR 4/2) loamy fine sand, grayish brown (10YR 5/2) dry;

- weak fine subangular blocky structure; very friable; common very fine and fine roots; neutral; abrupt smooth boundary.
- E—6 to 17 inches; grayish brown (10YR 5/2) fine sand; weak thick platy structure parting to weak coarse subangular blocky; very friable; common very fine roots; neutral; clear smooth boundary.
- Bt—17 to 22 inches; brown (10YR 4/3) fine sandy loam; weak fine subangular blocky structure; very friable; common very fine roots; few distinct discontinuous dark brown (10YR 3/3) clay films on faces of peds; neutral; clear smooth boundary.
- C1—22 to 38 inches; pale brown (10YR 6/3) fine sand; few fine faint light yellowish brown (10YR 6/4) iron concentrations; single grain; loose; few very fine roots; very slightly effervescent; slightly alkaline; clear wavy boundary.
- C2—38 to 52 inches; light brownish gray (10YR 6/2) fine sand; few fine distinct brownish yellow (10YR 6/6) and few fine faint pale brown (10YR 6/3) iron concentrations; single grain; loose; very slightly effervescent; slightly alkaline; gradual wavy boundary.
- C3—52 to 72 inches; light brownish gray (10YR 6/2) fine sand; common medium prominent strong brown (7.5YR 4/6) iron concentrations; single grain; loose; few fine prominent black (N 2/0) manganese nodules; slightly effervescent; slightly alkaline; gradual wavy boundary.
- C4—72 to 80 inches; light brownish gray (10YR 6/2), stratified fine sand, very fine sandy loam, and silt loam; few fine prominent strong brown (7.5YR 4/6) and common medium prominent yellowish brown (10YR 5/6) iron concentrations; massive; very friable; few fine faint light gray (10YR 7/2) threads and soft masses of lime between peds; strongly effervescent; slightly alkaline.

## Range in Characteristics

Depth to carbonates: 14 to 24 inches Content of rock fragments: 0 to 3 percent

Other features: Some pedons have a Bk horizon. This horizon has colors and textures similar to those of the C horizon. Also, some pedons have a 2C horizon, which is silt loam or very fine sandy loam.

A or Ap horizon:

Hue—10YR

Value—2 to 5

Chroma—1 to 3

Texture—loamy fine sand

E horizon:

Hue—10YR

Value—4 or 5

Chroma-2 to 4

Texture—loamy fine sand, fine sand, or loamy

Bt horizon:

Hue-10YR or 2.5Y

Value—3 to 5

Chroma-2 to 4

Texture—fine sandy loam, sandy loam, or loamy fine sand

C horizon:

Hue-10YR or 2.5Y

Value—5 or 6

Chroma-2 to 4

Texture—very fine sandy loam, loamy very fine sand, very fine sand, fine sand, sand, or silt loam; stratified with these textures in some pedons

# 1133B—Skime loamy fine sand, 0 to 4 percent slopes

# **Component Descriptions**

#### Skime and similar soils

Extent: 85 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 4 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60

Drainage class: Moderately well drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

2.5 feet (April)

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet (July, August)

Ponding: None

Available water capacity to a depth of 60 inches: 5.1

Content of organic matter in the upper 10 inches: 0.9 percent

#### Hiwood and similar soils

Extent: 10 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 1 to 6 percent

Texture of the surface layer: Fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (July, August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.7 inches

Content of organic matter in the upper 10 inches: 0.6 percent

## Zippel and similar soils

Extent: 5 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Very fine sandy loam Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Floodina: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June)

Available water capacity to a depth of 60 inches: 10.9

Content of organic matter in the upper 10 inches: 4.0 percent

## Management

Major uses: Pasture and hayland

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Forest Land" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

# Spooner Series

Drainage class: Poorly drained

Permeability: Moderate Landform: Lake plains

Parent material: Glaciolacustrine deposits

Slope range: 0 to 2 percent

Taxonomic classification: Fine-silty, mixed, superactive, frigid Mollic Endoaqualfs

# Typical Pedon

Spooner very fine sandy loam, 600 feet south and 2,100 feet west of the northeast corner of sec. 20, T. 161 N., R. 31 W., in Lake of the Woods County, Minnesota:

- Ap—0 to 6 inches; very dark gray (10YR 3/1) very fine sandy loam, gray (10YR 5/1) dry; weak very fine subangular blocky structure; very friable; slightly alkaline; abrupt smooth boundary.
- E—6 to 15 inches; light brownish gray (2.5Y 6/2) loamy very fine sand; common fine faint light gray (2.5Y 7/2) iron depletions and common fine prominent yellowish brown (10YR 5/6) and dark yellowish brown (10YR 4/4) iron concentrations; weak very thin platy structure; very friable; neutral; clear smooth boundary.
- Btg—15 to 22 inches; olive gray (5Y 5/2) loam; common fine prominent olive brown (2.5Y 4/4) and few fine prominent yellowish red (5YR 4/8) iron concentrations; moderate very fine angular blocky structure; friable; common distinct grayish brown (2.5Y 5/2) clay films on faces of peds; slightly alkaline; clear smooth boundary.
- Cg1—22 to 30 inches; light olive gray (5Y 6/2) silt loam; common fine prominent light olive brown (2.5Y 5/4) and yellowish brown (10YR 5/6) iron concentrations and common fine faint light gray (5Y 7/2) iron depletions; massive; very friable; strongly effervescent; slightly alkaline; gradual wavy boundary.
- Cg2—30 to 60 inches; light olive gray (5Y 6/2) laminated silt; common fine prominent yellowish brown (10YR 5/6), light olive brown (2.5Y 5/4), and strong brown (7.5YR 5/8) iron concentrations and common fine faint light gray (5Y 7/2) iron depletions; massive; very friable; strongly effervescent; slightly alkaline.

### Range in Characteristics

Depth to carbonates: 16 to 40 inches

Ap horizon:

Hue—10YR

Value—2 or 3

Chroma—1

Texture—very fine sandy loam

E horizon:

Hue-2.5Y

Value—5 or 6

Chroma—2

Texture—loamy very fine sand or very fine sandy loam

Btg horizon:

Hue-2.5Y or 5Y

Value—4 or 5

Chroma—2

Texture—silty clay loam

Cg horizon:

Hue-2.5Y or 5Y

Value—5 or 6

Chroma—2

Texture—very fine sandy loam, silt loam, silt, silty clay loam, or silt loam stratified with clay, silty clay loam, or very fine sandy loam

# 147—Spooner very fine sandy loam, 0 to 2 percent slopes

# **Component Descriptions**

## Spooner and similar soils

Extent: 85 percent of the unit

Geomorphic description: Flats on lake plains; swales

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Very fine sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8

feet (August)

Ponding does not occur (months): January, February,

March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 11.8

inches

Content of organic matter in the upper 10 inches: 2.1 percent

## **Baudette and similar soils**

Extent: 5 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 1 to 6 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 11.9 inches

Content of organic matter in the upper 10 inches: 2.1 percent

## Grygla and similar soils

Extent: 5 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits and till

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.1 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 8.7 inches

Content of organic matter in the upper 10 inches: 1.8 percent

## Sago and similar soils

Extent: 5 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 13.4 inches

Content of organic matter in the upper 10 inches: 72.5 percent

# Management

Major uses: Forest land and pasture

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Forest Land" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

# Strandquist Series

Drainage class: Poorly drained

Permeability: Upper part—rapid; lower part—moderate

Landform: Lake plains

Parent material: Glaciolacustrine deposits over till

Slope range: 0 to 2 percent

Taxonomic classification: Sandy-skeletal over loamy, mixed, superactive, calcareous, frigid Typic Endoaquolls

# Typical Pedon

Strandquist loam, 1,000 feet south and 200 feet west of the northeast corner of sec. 7, T. 160 N., R. 40 W.

- Ap—0 to 8 inches; black (10YR 2/1) loam, very dark gray (10YR 3/1) dry; weak fine subangular blocky structure; friable; many fine and very fine roots; 1 percent gravel; slightly alkaline; abrupt smooth boundary.
- 2Bg1—8 to 20 inches; grayish brown (2.5Y 5/2) very gravelly sand; few fine distinct brownish yellow (10YR 6/6) iron concentrations; single grain; loose; few fine and very fine roots; 50 percent gravel; 2 percent cobbles; slightly effervescent; slightly alkaline; gradual wavy boundary.
- 2Bg2—20 to 35 inches; light brownish gray (2.5Y 6/2) very gravelly sand; few fine prominent brownish yellow (10YR 6/6) iron concentrations; single grain; loose; few fine and very fine roots; 50 percent gravel; 5 percent cobbles; strongly effervescent; slightly alkaline; clear wavy boundary.
- 3Cg—35 to 80 inches; light brownish gray (2.5Y 6/2) loam; common medium prominent brownish yellow (10YR 6/6) and few fine prominent dark yellowish brown (10YR 4/6) iron concentrations; massive;

friable; 5 percent gravel; strongly effervescent; moderately alkaline.

## Range in Characteristics

Depth to carbonates: 10 inches or less

Thickness of the mollic epipedon: 7 to 12 inches

Ap horizon:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—loam

Content of rock fragments—0 to 10 percent

2Bg horizon:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—1 or 2

Texture—loamy sand, sand, loamy coarse sand, or coarse sand

Content of rock fragments—35 to 75 percent

3Cg horizon:

Hue-2.5Y or 5Y

Value—5 or 6

Chroma—2

Texture—sandy loam, fine sandy loam, loam, or silty clay loam

Content of rock fragments—3 to 10 percent

# 432—Strandquist loam, 0 to 2 percent slopes

### Component Descriptions

## Strandquist and similar soils

Extent: 85 percent of the unit

Geomorphic description: Flats on lake plains; swales

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

0.5 loot (April)

Wet soil moisture status is lowest (depth, months): 4.1

feet (August)

Ponding does not occur (months): January, February, March, July, August, September, November, December Ponding is deepest (depth, months): 0.3 foot (April, May, June, October)

Available water capacity to a depth of 60 inches: 6.3 inches

Content of organic matter in the upper 10 inches: 3.6 percent

## Percy, very cobbly, and similar soils

Extent: 5 percent of the unit

Geomorphic description: Flats on lake plains; swales

on lake plains

Slope range: 0 to 2 percent Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Till Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8

feet (August)

Ponding does not occur (months): January, February,

March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 10.0

inches

Content of organic matter in the upper 10 inches: 5.4 percent

#### Haug and similar soils

Extent: 4 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained

Parent material: Organic materials over till

Flooding: None

Wet soil moisture status is highest (depth, months): At

the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 11.8 inches

Content of organic matter in the upper 10 inches: 70.0 percent

#### Boash and similar soils

Extent: 3 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Clay loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): At

the surface (April)

Wet soil moisture status is lowest (depth, months): 3.0

feet (August)

Ponding does not occur (months): January, February,

March, December

Ponding is deepest (depth, months): 0.3 foot (April,

May, June, November)

Available water capacity to a depth of 60 inches: 9.6

inches

Content of organic matter in the upper 10 inches: 4.3

percent

# Foxhome and similar soils

Extent: 3 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months):

2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7

feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 8.3

nches

Content of organic matter in the upper 10 inches: 5.0

percent

# Management

Major uses: Cropland; pasture and hayland

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Recreation" section

- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

#### Strathcona Series

Drainage class: Very poorly drained and poorly

drained

Permeability: Upper part—moderately rapid; lower

part—moderate Landform: Lake plains

Parent material: Glaciolacustrine deposits over till

Slope range: 0 to 2 percent

Taxonomic classification: Sandy over loamy, mixed,

superactive, frigid Typic Calciaquolls

# Typical Pedon

Strathcona fine sandy loam (fig. 11), 1,500 feet south and 600 feet west of the northeast corner of sec. 34, T. 159 N., R. 40 W.

Ap—0 to 10 inches; black (10YR 2/1) fine sandy loam, very dark gray (10YR 3/1) dry; weak fine subangular blocky structure; very friable; many very fine and fine roots; strongly effervescent; moderately alkaline; abrupt wavy boundary.

Bkg—10 to 17 inches; dark gray (10YR 4/1) fine sandy loam; weak fine subangular blocky structure; very friable; common very fine and fine roots; violently effervescent; moderately alkaline; clear wavy boundary.

Cg1—17 to 28 inches; light brownish gray (2.5Y 6/2) fine sand; common fine distinct light olive brown (2.5Y 5/6) iron concentrations; single grain; loose; slightly effervescent; slightly alkaline; abrupt wavy boundary.

2Cg2—28 to 56 inches; grayish brown (2.5Y 5/2) clay loam; common fine and medium prominent strong brown (7.5YR 5/8) iron concentrations; massive; friable; strongly effervescent; 3 percent gravel; slightly alkaline; gradual wavy boundary.

2Cg3—56 to 80 inches; dark grayish brown (2.5Y 4/2) loam; common fine and medium prominent strong brown (7.5YR 5/8) iron concentrations and common fine distinct gray (10YR 5/1) iron depletions; massive; friable; strongly effervescent; 8 percent gravel; slightly alkaline.

### Range in Characteristics

Thickness of the mollic epipedon: 7 to 14 inches

Ap or A horizon:

Hue—10YR or N Value—2 or 3

Chroma-0 or 1

Texture—fine sandy loam or mucky loam Content of rock fragments—0 to 2 percent

Bkg horizon:

Hue—10YR, 2.5Y, 5Y, or N

Value—4 to 6

Chroma-0 to 2

Texture—sandy loam or fine sandy loam Content of rock fragments—0 to 5 percent

Ca horizon:

Hue-2.5Y or 5Y

Value—4 to 7

Chroma—2

Texture—sand, fine sand, or loamy fine sand Content of rock fragments—0 to 10 percent

2Cg horizon:

Hue-2.5Y or 5Y

Value—4 to 6

Chroma—2

Texture—fine sandy loam, loam, or clay loam Content of rock fragments—2 to 10 percent

# 439—Strathcona fine sandy loam, 0 to 2 percent slopes

# **Component Descriptions**

### Strathcona and similar soils

Extent: 85 percent of the unit

Geomorphic description: Flats on lake plains; swales

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.1

feet (August)

Ponding does not occur (months): January, February, March, July, August, September, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 8.5 inches

Content of organic matter in the upper 10 inches: 4.5 percent

#### Northwood and similar soils

Extent: 5 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits or till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 11.8 inches

Content of organic matter in the upper 10 inches: 67.5 percent

#### Percy and similar soils

Extent: 5 percent of the unit

Geomorphic description: Flats on lake plains; swales

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Till Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 10.1 inches

Content of organic matter in the upper 10 inches: 6.5 percent

## Grimstad and similar soils

Extent: 3 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Somewhat poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): 1.5 feet (April)

Wet soil moisture status is lowest (depth, months):
More than 6.7 feet (August)

Ponding: None

Available water capacity to a depth of 60 inches: 8.3

Content of organic matter in the upper 10 inches: 3.0 percent

# Strandquist and similar soils

Extent: 2 percent of the unit

Geomorphic description: Flats on lake plains; swales

on lake plains Slope range: 0 to 2 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.1 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, October)

Available water capacity to a depth of 60 inches: 6.3 inches

Content of organic matter in the upper 10 inches: 3.6 percent

## Management

Major uses: Cropland; pasture and hayland

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

# 1144—Strathcona and Kratka soils, depressional, 0 to 1 percent slopes

# **Component Descriptions**

## Strathcona, depressional, and similar soils

Extent: 0 to 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Mucky fine sandy loam Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February, August)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September, October)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, November, December)

Available water capacity to a depth of 60 inches: 8.7 inches

Content of organic matter in the upper 10 inches: 15.0 percent

## Kratka, depressional, and similar soils

Extent: 0 to 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Mucky fine sandy loam Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February, August)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September, October)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, November, December)

Available water capacity to a depth of 60 inches: 8.1 inches

Content of organic matter in the upper 10 inches: 13.9 percent

#### Kratka and similar soils

Extent: 5 percent of the unit

Geomorphic description: Flats on lake plains; swales

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.1

feet (August)

Ponding does not occur (months): January, February, March, July, August, September, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 8.2 inches

Content of organic matter in the upper 10 inches: 2.9 percent

#### Northwood and similar soils

Extent: 5 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits or till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 11.8 inches

Content of organic matter in the upper 10 inches: 67.5 percent

#### Management

Major uses: Wildlife habitat and pasture

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

# Syrene Series

Drainage class: Very poorly drained and poorly

drained

Permeability: Rapid
Landform: Beach plains
Parent material: Beach de

Parent material: Beach deposits Slope range: 0 to 2 percent

Taxonomic classification: Sandy, mixed, frigid Typic

Calciaquolls

# Typical Pedon

Syrene sandy loam, 1,100 feet north and 300 feet west of the southeast corner of sec. 8, T. 159 N., R. 41 W.

Ap—0 to 11 inches; black (10YR 2/1) sandy loam, dark gray (10YR 4/1) dry; weak fine subangular blocky structure parting to weak very fine subangular blocky; friable; many very fine and fine roots and few medium roots; strongly effervescent; 2 percent gravel; slightly alkaline; clear smooth boundary.

Bkg1—11 to 19 inches; light brownish gray (2.5Y 6/2) fine sandy loam; few fine prominent olive yellow (2.5Y 6/8) iron concentrations; weak fine subangular blocky structure; friable; many fine and many very fine roots; many light gray (10YR 7/2) carbonate coats on faces of peds and in pores; violently effervescent; 10 percent gravel; slightly alkaline; clear wavy boundary.

2Bkg2—19 to 28 inches; light brownish gray (2.5Y 6/2) gravelly coarse sand; few medium distinct olive yellow (2.5Y 6/6) and few medium prominent yellowish brown (10YR 5/4) iron concentrations; single grain; loose; few fine roots; few distinct light gray (10YR 7/2) carbonate coats on faces of peds and in pores; violently effervescent; 20 percent gravel; slightly alkaline; clear wavy boundary.

2Cg1—28 to 42 inches; grayish brown (2.5Y 5/2) gravelly coarse sand; many medium distinct light olive brown (2.5Y 5/6) and olive yellow (2.5Y 6/6) and few medium prominent brownish yellow (10YR 6/6) iron concentrations; single grain; loose; strongly effervescent; 25 percent gravel; slightly alkaline; clear wavy boundary.

2Cg2—42 to 48 inches; grayish brown (2.5Y 5/2) coarse sand; common fine distinct light olive brown (2.5Y 5/6) and common fine prominent

- yellowish brown (10YR 5/6) iron concentrations; single grain; loose; strongly effervescent; 5 percent gravel; slightly alkaline; clear wavy boundary.
- 2Cg3—48 to 60 inches; grayish brown (2.5Y 5/2) gravelly coarse sand; many medium distinct light olive brown (2.5Y 5/6), many fine prominent yellowish brown (10YR 5/6), and common fine distinct olive yellow (2.5Y 6/6) iron concentrations; single grain; loose; strongly effervescent; 33 percent gravel; slightly alkaline; clear wavy boundary.
- 2Cg4—60 to 65 inches; light olive gray (5Y 6/2) sand; common medium prominent yellowish brown (10YR 5/6) and few medium prominent olive yellow (2.5Y 6/6) iron concentrations; single grain; loose; slightly effervescent; 7 percent gravel; slightly alkaline; clear wavy boundary.
- 2Cg5—65 to 80 inches; light olive gray (5Y 6/2) gravelly sand; few medium prominent yellowish brown (10YR 5/6 and 5/4) iron concentrations; single grain; loose; slightly effervescent; 20 percent gravel; slightly alkaline.

## Range in Characteristics

Thickness of the mollic epipedon: 8 to 12 inches

A or Ap horizon:

Hue-10YR or N

Value—2 or 3

Chroma—0 or 1

Texture—sandy loam or mucky sandy loam Content of rock fragments—0 or 5 percent

Bkg horizon:

Hue-2.5Y or 5Y

Value—4 to 6

Chroma—1 or 2

Texture—sandy loam, fine sandy loam, or sandy clay loam

Content of rock fragments—2 to 10 percent

2Bkg horizon:

Hue-2.5Y

Value—5 to 7

Chroma—2

Texture—coarse sand, fine sand, or loamy sand Content of rock fragments—15 to 35 percent

2Cg horizon:

Hue-2.5Y or 5Y

Value—4 to 6

Chroma—2

Texture—coarse sand, sand, or fine sand Content of rock fragments—5 to 50 percent

# 433—Syrene mucky sandy loam, depressional, 0 to 1 percent slopes

## Component Descriptions

#### Syrene, depressional, and similar soils

Extent: 85 percent of the unit

Geomorphic description: Depressions on beach plains

Slope range: 0 to 1 percent

Texture of the surface layer: Mucky sandy loam
Depth to restrictive feature: Very deep (more than 60

Drainage class: Very poorly drained Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (April)

Wet soil moisture status is lowest (depth, months): 3.0 feet (February, August)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September, October)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, November, December)

Available water capacity to a depth of 60 inches: 4.2 inches

Content of organic matter in the upper 10 inches: 6.5 percent

#### Deerwood and similar soils

Extent: 5 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over

glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 8.1

Content of organic matter in the upper 10 inches: 70.0 percent

#### Rosewood and similar soils

Extent: 5 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.9 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 5.7 inches

Content of organic matter in the upper 10 inches: 5.5 percent

#### Syrene soils that are not in depressions

Extent: 5 percent of the unit

Geomorphic description: Flats on beach plains; swales

on beach plains Slope range: 0 to 2 percent

Texture of the surface layer: Sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.3 foot (April)

Wet soil moisture status is lowest (depth, months): 3.3 feet (February, August)

Ponding does not occur (months): January, February, March, July, August, September, October, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 4.3 inches

Content of organic matter in the upper 10 inches: 5.5 percent

### Management

Major uses: Pasture and wildlife habitat

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

## 435—Syrene sandy loam, 0 to 2 percent slopes

#### Component Descriptions

#### Syrene and similar soils

Extent: 85 percent of the unit

Geomorphic description: Flats on beach plains; swales

on beach plains Slope range: 0 to 2 percent

Texture of the surface layer: Sandy loam

Depth to restrictive feature: Very deep (more than 60

nches)

Drainage class: Poorly drained Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

0.3 foot (April)

Wet soil moisture status is lowest (depth, months): 3.3

feet (February, August)

Ponding does not occur (months): January, February, March, July, August, September, October, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 4.3

Content of organic matter in the upper 10 inches: 5.5 percent

#### Rosewood and similar soils

Extent: 5 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.9

feet (August)

Ponding does not occur (months): January, February, March, July, August, September, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 5.7 inches

Content of organic matter in the upper 10 inches: 5.5 percent

### Syrene, depressional, and similar soils

Extent: 5 percent of the unit

Geomorphic description: Depressions on beach plains

Slope range: 0 to 1 percent

Texture of the surface layer: Mucky sandy loam Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (April)

Wet soil moisture status is lowest (depth, months): 3.0 feet (February, August)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September, October)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, November, December)

Available water capacity to a depth of 60 inches: 4.2 inches

Content of organic matter in the upper 10 inches: 6.5 percent

## Karlsruhe and similar soils

Extent: 3 percent of the unit

Geomorphic description: Rises on beach plains

Slope range: 0 to 3 percent

Texture of the surface layer: Sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained

Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.0 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.2 inches

Content of organic matter in the upper 10 inches: 4.8 percent

#### Deerwood and similar soils

Extent: 2 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 8.1 inches

Content of organic matter in the upper 10 inches: 70.0 percent

## Management

Major uses: Cropland; pasture and hayland

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- · "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

## **Tacoosh Series**

Drainage class: Very poorly drained

Permeability: Upper part—moderate or moderately rapid; lower part—moderately slow or moderate

Landform: Lake plains

Parent material: Organic materials over

glaciolacustrine deposits *Slope range:* 0 to 1 percent

Taxonomic classification: Loamy, mixed, euic, frigid

Terric Haplohemists

### Typical Pedon

Tacoosh mucky peat, 2,700 feet south and 1,000 feet west of the northeast corner of sec. 36, T. 163 N., R. 39 W.

Oe1—0 to 17 inches; mucky peat, dark brown (7.5YR 3/3) broken face and pressed, dark brown (7.5YR 3/2) rubbed; about 52 percent fiber, 28 percent rubbed; weak thin and medium platy structure; very friable; few fine and many very fine roots; neutral; gradual wavy boundary.

Oe2—17 to 31 inches; mucky peat, very dark brown (10YR 2/2) broken face and pressed, black (10YR 2/1) rubbed; about 37 percent fiber, 18 percent rubbed; weak thin and medium platy structure; very friable; few fine and many very fine roots; neutral; gradual wavy boundary.

Oa-31 to 33 inches; muck, black (10YR 2/1) broken face, very dark gray (10YR 3/1) rubbed; about 18 percent fiber, 8 percent rubbed; weak thin platy structure; very friable; common fine and many very fine roots; neutral; clear wavy boundary.

A-33 to 39 inches; black (N 2/0) silty clay loam; weak fine subangular blocky structure; friable; neutral; clear wavy boundary.

Cg1—39 to 57 inches; grayish brown (2.5Y 5/2) silt loam; common fine faint light olive brown (2.5Y 5/3) iron concentrations; massive; friable; few fine faint irregular light gray (2.5Y 7/2) soft masses of lime on faces of peds; strongly effervescent; slightly alkaline; clear wavy boundary.

Cg2—57 to 66 inches; light brownish gray (2.5Y 6/2) silt loam; common fine distinct olive yellow (2.5Y 6/6) and few fine prominent strong brown (7.5YR 4/6) iron concentrations; weak thin platy soil fragments; friable; very few distinct patchy light gray (10YR 7/1) silt coats on faces of peds; slightly effervescent; slightly alkaline; clear wavy boundary.

Cg3—66 to 80 inches; light brownish gray (2.5Y 6/2) silt loam; common fine distinct olive yellow (2.5Y 6/6) and light olive brown (2.5Y 5/6) iron concentrations; weak thin platy soil fragments; friable; very few distinct patchy light gray (10YR 7/1) silt coats on faces of peds; slightly effervescent; slightly alkaline.

#### Range in Characteristics

Depth to carbonates: 16 to more than 51 inches Thickness of the organic material: 16 to 51 inches

Oe horizon:

Hue—10YR, 7.5YR, or 5YR Value—2 or 3 Chroma—1 or 3 Texture—mucky peat

Oa horizon:

Hue—10YR Value—2 or 3 Chroma—1 Texture—muck

A horizon:

Value—2 or 3

Texture—silty clay loam

Cg horizon:

Hue-10YR or 2.5Y

Value—4 to 6

Chroma—1 or 2

Texture—silt loam or silty clay loam

## 1314—Tacoosh mucky peat, MAP 22-30, 0 to 1 percent slopes

## Component Descriptions

#### Tacoosh and similar soils

Extent: 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Mucky peat

Depth to restrictive feature: Very deep (more than 60

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May, June)

Wet soil moisture status is lowest (depth, months): 2.1 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (January, February, July, August, September, October, November, December)

Ponding is deepest (depth, months): 0.5 foot (March, April. Mav. June)

Available water capacity to a depth of 60 inches: 21.6

Content of organic matter in the upper 10 inches: 87.0 percent

#### Rifle and similar soils

Extent: 8 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Mucky peat

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials

Flooding: None

Wet soil moisture status is highest (depth, months): At

the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 1.6 feet (February, August)

Ponding is shallowest (depth, months): 0.3 foot (January, February, July, August, September, October, November, December)

Ponding is deepest (depth, months): 0.5 foot (March, April, May, June)

Available water capacity to a depth of 60 inches: 31.7 inches

Content of organic matter in the upper 10 inches: 82.0 percent

### Sax and similar soils

Extent: 2 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 14.5 inches

Content of organic matter in the upper 10 inches: 47.5 percent

#### Management

Major uses: Pasture, wildlife habitat, and cropland

For general and detailed information about managing this map unit, see the following sections:

- · "Agronomy" section
- "Forest Land" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

#### Tawas Series

Drainage class: Very poorly drained

Permeability: Upper part—moderately slow to moderately rapid; lower part—rapid

Landform: Lake plains

Parent material: Organic materials over glaciolacustrine deposits

Slope range: 0 to 1 percent

Taxonomic classification: Sandy or sandy-skeletal, mixed, euic, frigid Terric Haplosaprists

## Typical Pedon

Tawas muck, 2,300 feet north and 400 feet east of the southwest corner of sec. 27, T. 161 N., R. 37 W.

Oa1—0 to 10 inches; muck, black (10YR 2/1) broken face and rubbed; about 25 percent fiber, 15 percent rubbed; moderate very fine and fine granular structure; very friable; common very fine to medium roots and few coarse roots; 10 percent wood fragments; moderately acid; clear wavy boundary.

Oa2—10 to 27 inches; muck, black (N 2/0) broken face and rubbed; about 20 percent fiber, 10 percent rubbed; weak fine and medium subangular blocky structure parting to weak fine granular; very friable; few very fine to medium roots; 2 percent wood fragments; moderately acid; abrupt smooth boundary.

Cg1—27 to 39 inches; olive gray (5Y 4/2) sand; common fine and medium faint dark olive gray (5Y 3/2) iron depletions; single grain; loose; few very fine and fine roots; slightly acid; clear wavy boundary.

Cg2—39 to 45 inches; grayish brown (2.5Y 5/2) sand; common fine and medium faint dark grayish brown (2.5Y 4/2) iron depletions; single grain; loose; moderately acid; clear wavy boundary.

Cg3—45 to 58 inches; grayish brown (2.5Y 5/2) sand; common medium prominent strong brown (7.5YR 4/6) iron concentrations; single grain; loose; 2 percent gravel; moderately acid; gradual wavy boundary.

Cg4—58 to 80 inches; light olive brown (2.5Y 5/3) sand; common medium distinct light olive brown (2.5Y 5/6) iron concentrations; single grain; loose; 2 percent gravel; moderately acid.

#### Range in Characteristics

Depth to carbonates: More than 60 inches Thickness of the organic material: 16 to 51 inches Other features: Some pedons have an A horizon.

Oa horizon:

Hue-10YR or N

Value—2

Chroma—0 to 2

Texture—muck

Content of wood fragments—0 to 15 percent

Cg horizon:

Hue—5Y or 2.5Y Value—3 to 6 Chroma—1 to 3

Texture—loamy fine sand, fine sand, or sand Content of rock fragments—0 to 5 percent

# 627—Tawas muck, MAP 22-30, 0 to 1 percent slopes

## Component Descriptions

#### Tawas and similar soils

Extent: 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.2 foot (July, August, September)

Ponding is deepest (depth, months): 0.3 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 13.2

Content of organic matter in the upper 10 inches: 50.0 percent

#### Leafriver and similar soils

Extent: 4 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits

Floodina: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.2 foot (July, August, September)

Ponding is deepest (depth, months): 0.3 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 7.4 inches

Content of organic matter in the upper 10 inches: 70.0 percent

## Lupton and similar soils

Extent: 4 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 1.6 feet (February, August)

Ponding is shallowest (depth, months): 0.2 foot (July, August, September)

Ponding is deepest (depth, months): 0.3 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 23.9 inches

Content of organic matter in the upper 10 inches: 80.0 percent

#### **Cormant and similar soils**

Extent: 2 percent of the unit

Geomorphic description: Flats on lake plains; swales on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.9 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 4.9 inches

Content of organic matter in the upper 10 inches: 3.9 percent

## Management

Major uses: Forest land and wildlife habitat

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Forest Land" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

#### Thiefriver Series

Drainage class: Poorly drained

Permeability: Upper part—moderately rapid; lower

part—slow

Landform: Lake plains

Parent material: Glaciolacustrine deposits

Slope range: 0 to 2 percent

Taxonomic classification: Sandy over clayey, mixed

over smectitic, frigid Typic Calciaquolls

## Typical Pedon

Thiefriver fine sandy loam, 200 feet south and 200 feet east of the northwest corner of sec. 11, T. 159 N., R. 40 W.

Ap—0 to 10 inches; black (10YR 2/1) fine sandy loam, very dark gray (10YR 3/1) dry; weak fine subangular blocky structure parting to weak very fine subangular blocky; friable; common fine roots; slightly effervescent; slightly alkaline; clear smooth boundary.

Bkg—10 to 16 inches; gray (10YR 5/1) fine sandy loam; weak fine subangular blocky structure parting to weak very fine subangular blocky; friable; common fine roots; violently effervescent; moderately alkaline; clear smooth boundary.

Cg1—16 to 30 inches; light brownish gray (2.5Y 6/2) fine sand; many coarse prominent olive yellow (2.5Y 6/8) iron concentrations; single grain; loose; slightly alkaline; gradual wavy boundary.

Cg2—30 to 35 inches; light gray (2.5Y 7/2) fine sand; common medium prominent olive yellow (2.5Y 6/8) iron concentrations; single grain; loose; slightly alkaline; clear wavy boundary.

2Cg3—35 to 80 inches; olive gray (5Y 4/2) clay stratified with bands of light gray (5Y 7/2) silt loam <sup>1</sup>/<sub>16</sub> to <sup>1</sup>/<sub>4</sub> inch thick; few medium distinct light olive brown (2.5Y 5/6) iron concentrations; moderate medium platy soil fragments; firm; few fine

irregularly shaped white (2.5Y 8/1) soft masses of lime between plates; strongly effervescent; slightly alkaline.

### Range in Characteristics

Thickness of the mollic epipedon: 7 to 10 inches

Ap horizon:

Hue-10YR

Value—2

Chroma—1

Texture—fine sandy loam

Bkg horizon:

Hue-10YR or 2.5Y

Value—5 or 6

Chroma—1 or 2

Texture—fine sandy loam or loamy fine sand

Cg horizon:

Hue-10YR or 2.5Y

Value—5 to 7

Chroma—2

Texture—fine sand

2Cg horizon:

Hue-2.5Y or 5Y

Value-4 or 5

Chroma—2

Texture—clay, silty clay, or clay stratified with silt

loam and very fine sandy loam

# 651—Thiefriver fine sandy loam, 0 to 2 percent slopes

## Component Descriptions

## Thiefriver and similar soils

Extent: 85 percent of the unit

Geomorphic description: Flats on lake plains; swales

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8

feet (August)

Ponding does not occur (months): January, February,

March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June)

Available water capacity to a depth of 60 inches: 7.6 inches

Content of organic matter in the upper 10 inches: 3.0 percent

#### Grano and similar soils

Extent: 5 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 2 percent Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (April)

Wet soil moisture status is lowest (depth, months): 3.0 feet (August)

Ponding does not occur (months): January, February, March, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, November)

Available water capacity to a depth of 60 inches: 9.7 inches

Content of organic matter in the upper 10 inches: 3.5 percent

#### **Huot and similar soils**

Extent: 5 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7

feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 7.9

inches

Content of organic matter in the upper 10 inches: 3.0 percent

#### Wildwood and similar soils

Extent: 5 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 5.7 inches

Content of organic matter in the upper 10 inches: 62.0 percent

## Management

Major uses: Cropland

For general and detailed information about managing this map unit, see the following sections:

"Agronomy" section

"Forest Land" section

"Recreation" section

• "Wildlife Habitat" section

• "Engineering" and "Soil Properties" sections

#### Two Inlets Series

Drainage class: Excessively drained

Permeability: Upper part—rapid; lower part—very

rapid

Landform: Beach ridges

Parent material: Beach deposits Slope range: 0 to 6 percent

Taxonomic classification: Mixed, frigid Psammentic

Hapludalfs

## Typical Pedon

Two Inlets loamy sand, 2,200 feet north and 200 feet west of the southeast corner of sec. 32, T. 161 N., R. 37 W.

A—0 to 2 inches; very dark gray (10YR 3/1) loamy sand, dark grayish brown (10YR 4/2) dry; weak fine and medium granular structure; very friable; many very fine to medium roots; 1 percent gravel; neutral; clear smooth boundary.

- E—2 to 4 inches; brown (10YR 4/3) loamy coarse sand; weak fine granular structure; very friable; many very fine and fine roots and common medium and coarse roots; 1 percent gravel; slightly acid; clear smooth boundary.
- Bt—4 to 17 inches; brown (7.5YR 4/3) loamy coarse sand; weak fine and medium granular structure; very friable; many very fine roots and common fine and medium roots; few faint patchy brown (7.5YR 4/4) clay films and bridges between sand grains; 2 percent gravel; slightly acid; clear wavy boundary.
- C1—17 to 28 inches; yellowish brown (10YR 5/4) coarse sand; single grain; loose; common very fine and fine roots; 5 percent gravel; neutral; gradual wavy boundary.
- C2—28 to 58 inches; brown (10YR 5/3) coarse sand; single grain; loose; common very fine roots; 2 percent gravel; neutral; gradual wavy boundary.
- C3—58 to 73 inches; pale brown (10YR 6/3) sand; single grain; loose; neutral; gradual wavy boundary.
- C4—73 to 80 inches; pale brown (10YR 6/3) coarse sand; single grain; loose; 1 percent gravel; neutral.

## Range in Characteristics

Depth to carbonates: More than 60 inches

A horizon:

Hue-10YR

Value—2 or 3

Chroma—1 or 2

Texture—loamy sand

Content of rock fragments—0 to 5 percent

E horizon:

Hue—10YR

Value—3 to 5

Chroma—3 or 4

Texture—sand, loamy sand, or loamy coarse sand Content of rock fragments—0 to 5 percent

Bt horizon:

Hue-7.5YR or 10YR

Value—4

Chroma-3 or 4

Texture—loamy sand or loamy coarse sand Content of rock fragments—0 to 5 percent

C horizon:

Hue-10YR

Value—4 to 6

Chroma—3 or 4

Texture—sand or coarse sand

Content of rock fragments—2 to 15 percent

## 1399B—Two Inlets loamy sand, noncalcareous substratum, 0 to 6 percent slopes

#### Component Descriptions

#### Two Inlets and similar soils

Extent: 85 percent of the unit

Geomorphic description: Beach ridges

Position on the landform: Shoulders, summits

Slope range: 0 to 6 percent

Texture of the surface layer: Loamy sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Excessively drained Parent material: Beach deposits

Flooding: None

Depth to wet soil moisture status: More than 6.7 feet

all year Ponding: None

Available water capacity to a depth of 60 inches: 3.0

inches

Content of organic matter in the upper 10 inches: 0.3

percent

#### Wurtsmith and similar soils

Extent: 6 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

2.5 feet (April)

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet (July, August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.6

inches

Content of organic matter in the upper 10 inches: 0.8

percent

#### Zimmerman and similar soils

Extent: 6 percent of the unit

Geomorphic description: Beach ridges

Position on the landform: Shoulders, summits

Slope range: 1 to 6 percent

Texture of the surface layer: Fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Excessively drained Parent material: Beach deposits

Flooding: None

Depth to wet soil moisture status: More than 6.7 feet

all year Ponding: None

Available water capacity to a depth of 60 inches: 4.8

Content of organic matter in the upper 10 inches: 0.6 percent

#### Meehan and similar soils

Extent: 3 percent of the unit

Geomorphic description: Rises on lake plains; flats on

lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Somewhat poorly drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 1.5 feet (April)

Wet soil moisture status is lowest (depth, months):
More than 6.7 feet (August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.4 inches

Content of organic matter in the upper 10 inches: 1.4 percent

#### Management

Major uses: Forest land and wildlife habitat

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Forest Land" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

## **Ulen Series**

Drainage class: Moderately well drained

Permeability: Rapid Landform: Lake plains

Parent material: Glaciolacustrine deposits

Slope range: 0 to 3 percent

Taxonomic classification: Sandy, mixed, frigid Aeric

Calciaquolls

## Typical Pedon

Ulen fine sandy loam, 200 feet south and 850 feet west of the northeast corner of sec. 25, T. 162 N., R. 39 W.

- Ap—0 to 10 inches; black (10YR 2/1) fine sandy loam, very dark gray (10YR 3/1) dry; weak medium subangular blocky structure parting to weak fine subangular blocky; very friable; few fine roots; slightly effervescent; slightly alkaline; neutral; clear smooth boundary.
- Bk—10 to 16 inches; gray (10YR 5/1) fine sandy loam; weak medium subangular blocky structure parting to weak fine subangular blocky; friable; few fine roots; many distinct light gray (10YR 7/1) carbonate coats on faces of peds and in pores; violently effervescent; 2 percent gravel; moderately alkaline; clear smooth boundary.
- C1—16 to 27 inches; light yellowish brown (2.5Y 6/4) fine sand; many medium distinct olive yellow (2.5Y 6/6) and few fine prominent dark yellowish brown (10YR 4/6) iron concentrations; single grain; loose; slightly effervescent; slightly alkaline; gradual wavy boundary.
- C2—27 to 36 inches; light yellowish brown (2.5Y 6/4) fine sand; many medium distinct olive yellow (2.5Y 6/8) iron concentrations; single grain; loose; slightly effervescent; slightly alkaline; clear wavy boundary.
- C3—36 to 50 inches; light brownish gray (2.5Y 6/2) fine sand; common medium distinct olive yellow (2.5Y 6/8) and few medium prominent brownish yellow (10YR 6/8) iron concentrations; single grain; loose; slightly effervescent; slightly alkaline; gradual wavy boundary.
- C4—50 to 67 inches; light brownish gray (2.5Y 6/2) fine sand; common medium distinct olive yellow (2.5Y 6/6) iron concentrations; single grain; loose; slightly effervescent; slightly alkaline; gradual wavy boundary.
- 2Cg—67 to 80 inches; light olive gray (5Y 6/2) very fine sandy loam; common medium distinct light olive brown (2.5Y 5/6) and common fine prominent olive yellow (2.5Y 6/8) iron concentrations; weak thin platy structure; friable; slightly effervescent; slightly alkaline.

## Range in Characteristics

Thickness of the mollic epipedon: 8 to 18 inches Other features: Some pedons have a 2C horizon below a depth of 40 inches. This horizon is very fine sandy loam or silt loam.

Ap horizon:

Hue—10YR Value—2 or 3 Chroma—1 or 2

Texture—fine sandy loam

Bk horizon:

Hue-10YR or 2.5Y

Value—4 or 5

Chroma—1 or 2

Texture—fine sandy loam, loamy fine sand, or loamy sand

C horizon:

Hue-10YR, 2.5Y, or 5Y

Value—5 or 6

Chroma—2 to 6

Texture—fine sand

# 64—Ulen fine sandy loam, 0 to 3 percent slopes

## Component Descriptions

#### Ulen and similar soils

Extent: 85 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

2.0 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (August)

Ponding: None

Available water capacity to a depth of 60 inches: 5.1

inches

Content of organic matter in the upper 10 inches: 3.5 percent

#### Rosewood and similar soils

Extent: 10 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.9 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 5.7 inches

Content of organic matter in the upper 10 inches: 5.5 percent

## Redby and similar soils

Extent: 3 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Somewhat poorly drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 1.5 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.8

inches

Content of organic matter in the upper 10 inches: 0.6 percent

#### Rushlake and similar soils

Extent: 2 percent of the unit

Geomorphic description: Rises on beach plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained

Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 3.0 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (July, August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.0

inches

Content of organic matter in the upper 10 inches: 1.9 percent

## Management

Major uses: Cropland and hayland

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- · "Forest Land" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

### Wabanica Series

Drainage class: Poorly drained and very poorly

drained

Permeability: Moderate Landform: Lake plains

Parent material: Glaciolacustrine deposits

Slope range: 0 to 2 percent

Taxonomic classification: Fine-silty, mixed,

superactive, calcareous, frigid Typic Endoaquolls

## Typical Pedon

Wabanica silt loam, 400 feet north and 400 feet east of the southwest corner of sec. 3, T. 162 N., R. 35 W.

- Ap—0 to 8 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; weak fine and medium subangular blocky structure; very friable; slightly effervescent; slightly alkaline; abrupt smooth boundary.
- Bg—8 to 19 inches; dark grayish brown (2.5Y 4/2) silt loam; few fine faint light olive brown (2.5Y 5/4) and few fine faint olive brown (2.5Y 4/4) iron concentrations; weak medium subangular blocky structure; friable; strongly effervescent; slightly alkaline; clear smooth boundary.
- Cg1—19 to 52 inches; grayish brown (2.5Y 5/2) silt loam with bands of olive brown (2.5Y 4/3) clay <sup>1</sup>/<sub>16</sub> to <sup>1</sup>/<sub>4</sub> inch thick; common faint olive gray (5Y 5/2) iron depletions and common prominent yellowish brown (10YR 5/6) iron concentrations; massive; firm; very few fine prominent black (N 2/0) manganese nodules; strongly effervescent; slightly alkaline; clear wavy boundary.
- Cg2—52 to 70 inches; light brownish gray (2.5Y 6/2) silt loam with bands of olive brown (2.5Y 4/3) clay <sup>1</sup>/<sub>16</sub> to <sup>1</sup>/<sub>4</sub> inch thick; common medium prominent yellowish brown (10YR 5/6) iron concentrations; massive; firm; strongly effervescent; slightly alkaline; clear wavy boundary.
- Cg3—70 to 80 inches; light brownish gray (2.5Y 6/2) silt loam stratified with bands of olive gray (5Y 4/2) and dark gray (5Y 4/1) clay <sup>1</sup>/<sub>4</sub> to <sup>1</sup>/<sub>2</sub> inch thick; few fine distinct olive (5Y 5/3) and common medium prominent dark yellowish brown (10YR 4/6) iron

concentrations; massive; very firm; few prominent discontinuous light gray (2.5Y 7/2) carbonate coats on faces of peds; strongly effervescent; 1 percent gravel; slightly alkaline.

## Range in Characteristics

Thickness of the mollic epipedon: 7 to 14 inches

Ap horizon:

Hue—10YR Value—2 or 3

Chroma—1 or 2

Texture—silt loam or mucky silt loam

Bg horizon:

Hue-2.5Y or 5Y

Value—3 to 5

Chroma—1 or 2

Texture—silt loam or silty clay loam

Cg horizon:

Hue-2.5Y or 5Y

Value—4 to 6

Chroma—1 or 2

Texture—silt loam, silty clay loam, or silt loam

stratified with clay

Content of rock fragments—0 to 2 percent

# 569—Wabanica silt loam, 0 to 2 percent slopes

### **Component Descriptions**

## Wabanica and similar soils

Extent: 85 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Silt loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, July, September, October, November)

Available water capacity to a depth of 60 inches: 12.0 inches

Content of organic matter in the upper 10 inches: 2.5 percent

#### Warroad and similar soils

Extent: 6 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.1

feet (August)

Ponding does not occur (months): January, February, March, July, August, September, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 9.7

Content of organic matter in the upper 10 inches: 3.5 percent

#### Sax and similar soils

Extent: 4 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5

feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 14.5 inches

Content of organic matter in the upper 10 inches: 47.5 percent

#### Grano and similar soils

Extent: 3 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 2 percent Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At

the surface (April)

Wet soil moisture status is lowest (depth, months): 3.0

feet (August)

Ponding does not occur (months): January, February,

March, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, November)

wailable water capacity to

Available water capacity to a depth of 60 inches: 9.7

inches

Content of organic matter in the upper 10 inches: 3.5

percent

#### **Enstrom and similar soils**

Extent: 2 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60

inches

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months):

2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7

feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 8.1

inches

Content of organic matter in the upper 10 inches: 1.5

percent

#### Management

Major uses: Cropland

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Forest Land" section
- "Recreation" section

- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

#### Warroad Series

Drainage class: Poorly drained

Permeability: Upper part—moderately rapid or rapid;

lower part—moderately slow

Landform: Lake plains

Parent material: Glaciolacustrine deposits

Slope range: 0 to 2 percent

Taxonomic classification: Sandy over loamy, mixed,

superactive, frigid Typic Epiaquolls

## Typical Pedon

Warroad fine sandy loam, 1,900 feet north and 1,900 feet west of the southeast corner of sec. 17, T. 162 N., R. 35 W.

- Ap—0 to 7 inches; black (10YR 2/1) fine sandy loam, very dark gray (10YR 3/1) dry; weak fine subangular blocky structure; very friable; strongly effervescent; moderately alkaline; clear smooth boundary.
- A—7 to 11 inches; black (10YR 2/1) fine sandy loam, very dark gray (10YR 3/1) dry; weak medium subangular blocky structure; very friable; strongly effervescent; moderately alkaline; clear smooth boundary.
- Bg—11 to 14 inches; dark grayish brown (2.5Y 4/2) loamy fine sand; few medium distinct olive brown (2.5Y 4/4) iron concentrations; weak fine subangular blocky structure; very friable; slightly alkaline; clear smooth boundary.
- Cg1—14 to 21 inches; grayish brown (2.5Y 5/2) fine sand; few fine prominent dark yellowish brown (10YR 4/6) and common medium distinct light olive brown (2.5Y 5/6) iron concentrations; few fine prominent black (N 2/0) manganese nodules; single grain; loose; slightly alkaline; clear wavy boundary.
- Cg2—21 to 26 inches; grayish brown (2.5Y 5/2) fine sand; few medium faint dark grayish brown (2.5Y 4/2) iron depletions and common medium distinct light olive brown (2.5Y 5/6) iron concentrations; single grain; loose; slightly alkaline; clear wavy boundary.
- 2Cg3—26 to 80 inches; grayish brown (2.5Y 5/2) silt loam with varves of very dark grayish brown (2.5Y 3/2) clay <sup>1</sup>/<sub>16</sub> to <sup>1</sup>/<sub>8</sub> inch thick; common medium distinct light olive brown (2.5Y 5/6) and common medium prominent strong brown (7.5YR 5/6) iron concentrations; weak thick and medium platy soil

fragments; friable; strongly effervescent; slightly alkaline.

## Range in Characteristics

Depth to carbonates: 20 to 40 inches

Thickness of the mollic epipedon: 7 to 13 inches

Ap or A horizon:

Hue-10YR or N

Value—2 or 3

Chroma—0 to 2

Texture—fine sandy loam

Bg horizon:

Hue-10YR or 2.5Y

Value—3 to 6

Chroma—1 or 2

Texture—fine sand, loamy fine sand, or sandy

loam

Cg horizon:

Hue-2.5Y

Value—4 to 6

Chroma—2 or 3

Texture—fine sand, loamy fine sand, or very fine

sand

Content of rock fragments—0 to 5 percent

2Cg horizon:

Hue—10YR, 2.5Y, or 5Y

Value—3 to 6

Chroma—1 or 2

Texture—very fine sandy loam, silt loam, or silty clay loam or clay stratified with very fine sandy

loam, silt loam, or silty clay loam

# 1182—Warroad fine sandy loam, 0 to 2 percent slopes

## Component Descriptions

#### Warroad and similar soils

Extent: 85 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.1 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 9.7

Content of organic matter in the upper 10 inches: 3.5 percent

#### Wabanica and similar soils

Extent: 7 percent of the unit

Geomorphic description: Flats on lake plains; swales

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Silt loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, July, September, October, November)

Available water capacity to a depth of 60 inches: 12.0 inches

Content of organic matter in the upper 10 inches: 2.5 percent

## **Enstrom and similar soils**

Extent: 5 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 8.1

Content of organic matter in the upper 10 inches: 1.5 percent

#### Sax and similar soils

Extent: 3 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 14.5 inches

Content of organic matter in the upper 10 inches: 47.5 percent

## Management

Major uses: Cropland

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Forest Land" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

### W-Water

### Component Descriptions

#### Water

Extent: 100 percent of the unit

Definition: Naturally occurring basins of surface water

### 1356—Water, miscellaneous

#### Component Descriptions

#### Water, miscellaneous

Extent: 100 percent of the unit

Definition: Small manmade areas that are used for industrial, sanitary, or mining applications and that contain water most of the year

## Wheatville Series

Drainage class: Moderately well drained

Permeability: Upper part—moderately rapid; lower

part—slow

Landform: Lake plains

Parent material: Glaciolacustrine deposits

Slope range: 0 to 2 percent

Taxonomic classification: Coarse-silty over clayey, mixed over smectitic, superactive, frigid Aeric

Calciaquolls

## Typical Pedon

Wheatville loam, 600 feet north and 2,400 feet west of the southeast corner of sec. 5, T. 161 N., R. 37 W.

- Ap—0 to 8 inches; black (10YR 2/1) loam, black (10YR 2/1) dry; weak fine subangular blocky structure; very friable; slightly effervescent; slightly alkaline; abrupt smooth boundary.
- A—8 to 12 inches; black (10YR 2/1) very fine sandy loam; weak very fine subangular blocky structure; very friable; slightly effervescent; slightly alkaline; clear wavy boundary.
- Bk1—12 to 16 inches; grayish brown (2.5Y 5/2) very fine sandy loam; weak thin platy structure parting to weak very fine subangular blocky; very friable; strongly effervescent; slightly alkaline; clear smooth boundary.
- Bk2—16 to 27 inches; light olive brown (2.5Y 5/3) very fine sandy loam; common fine distinct light olive brown (2.5Y 5/6) iron concentrations; weak fine subangular blocky structure; very friable; strongly effervescent; moderately alkaline; clear smooth boundary.
- C—27 to 35 inches; light yellowish brown (2.5Y 6/3) very fine sandy loam; many fine and medium distinct light olive brown (2.5Y 5/6) iron concentrations; massive; very friable; slightly effervescent; moderately alkaline; clear smooth boundary.
- 2Cg1—35 to 55 inches; dark grayish brown (2.5Y 4/2) clay with strata of grayish brown (2.5Y 5/2) very fine sandy loam <sup>1</sup>/<sub>16</sub> to <sup>1</sup>/<sub>4</sub> inch thick; many fine distinct light olive brown (2.5Y 5/6) and common fine distinct olive brown (2.5Y 4/4) iron concentrations; massive; firm; slightly to strongly effervescent; moderately alkaline; gradual smooth boundary.
- 2Cg2—55 to 80 inches; olive brown (2.5Y 4/3) clay with strata of grayish brown (2.5Y 5/2) silt loam and silty clay loam <sup>1</sup>/<sub>16</sub> to <sup>1</sup>/<sub>4</sub> inch thick; common medium prominent dark yellowish brown (10YR 4/6) and common fine faint olive brown (2.5Y 4/4) iron concentrations and few fine prominent very

dark gray (N 3/0) iron depletions; massive; firm; slightly to strongly effervescent; moderately alkaline.

## Range in Characteristics

Thickness of the mollic epipedon: 9 to 12 inches

Ap or A horizon:

Hue—10YR

Value—2 or 3

Chroma—1

Texture—loam

#### Bk horizon:

Hue-2.5Y or 10YR

Value—4 to 6

Chroma—1 to 3

Texture—very fine sandy loam or silt loam

#### C horizon:

Hue-2.5Y or 10YR

Value—5 or 6

Chroma—3 or 4

Texture—very fine sandy loam or silt loam

#### 2C horizon:

Hue-2.5Y

Value—4 or 5

Chroma—2 or 3

Texture—clay or clay stratified with very fine sandy loam, silt loam, or silty clay loam

# 1316—Wheatville loam, 0 to 2 percent slopes

## Component Descriptions

## Wheatville and similar soils

Extent: 85 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 2 percent Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

2.5 feet (April, May)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 9.5

Content of organic matter in the upper 10 inches: 5.0 percent

## Augsburg and similar soils

Extent: 13 percent of the unit

Geomorphic description: Flats on lake plains; swales

on lake plains

Slope range: 0 to 2 percent Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 10.5 inches

Content of organic matter in the upper 10 inches: 4.8 percent

#### Grano and similar soils

Extent: 2 percent of the unit

Geomorphic description: Flats on lake plains; swales

on lake plains Slope range: 0 to 2 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (April)

Wet soil moisture status is lowest (depth, months): 3.0 feet (August)

Ponding does not occur (months): January, February, March, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, November)

Available water capacity to a depth of 60 inches: 9.7 inches

Content of organic matter in the upper 10 inches: 3.5 percent

#### Management

Major uses: Cropland

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

### Wildwood Series

Drainage class: Very poorly drained

Permeability: Slow Landform: Lake plains

Parent material: Organic materials over

glaciolacustrine deposits Slope range: 0 to 1 percent

Taxonomic classification: Very fine, smectitic, nonacid,

frigid Histic Humaquepts

## Typical Pedon

Wildwood muck, 800 feet north and 700 feet east of the southwest corner of sec. 28, T. 163 N., R. 37 W.

Oa1—0 to 7 inches; muck, black (N 2/0) broken face and rubbed; weak very fine subangular blocky structure parting to weak very fine granular; very friable; many very fine to coarse roots; moderately acid; clear wavy boundary.

Oa2—7 to 12 inches; muck, black (N 2/0) broken face and rubbed; weak fine subangular blocky structure; very friable; common medium and coarse roots and many very fine and fine roots; slightly acid; clear smooth boundary.

A—12 to 15 inches; very dark gray (5Y 3/1) clay; common fine faint very dark grayish brown (2.5Y 3/2) iron depletions; weak fine and medium subangular blocky structure; firm; neutral; clear smooth boundary.

Bg—15 to 33 inches; dark olive gray (5Y 3/2) clay; common fine distinct olive brown (2.5Y 4/4) and few fine prominent dark yellowish brown (10YR 4/4) iron concentrations and common fine distinct very dark gray (N 3/0) iron and manganese depletions; weak medium subangular blocky structure; firm; neutral; clear wavy boundary.

Cg1—33 to 44 inches; dark gray (5Y 4/1) clay; common medium faint olive gray (5Y 4/2) iron depletions and few fine prominent olive brown (2.5Y 4/4) iron concentrations; massive; very firm; strongly effervescent; moderately alkaline; gradual wavy boundary.

Cg2—44 to 80 inches; dark gray (5Y 4/1) clay; common fine faint dark gray (5Y 4/1) and common medium faint olive gray (5Y 4/2) iron depletions and few fine prominent dark yellowish brown (10YR 4/6) iron concentrations; massive; very firm;

common medium rounded white (5Y 8/1) soft masses of lime on ped interiors; strongly effervescent; slightly alkaline.

## Range in Characteristics

Depth to carbonates: 18 to 33 inches

Thickness of the organic material: 8 to 16 inches

Oa horizon:

Hue-10YR or N

Value—2

Chroma—0 to 2

Texture—muck

A horizon:

Hue-10YR, 2.5Y, 5Y, or N

Value—2 or 3

Chroma—0 or 1

Texture—clay or silty clay

Bg horizon:

Hue—5Y

Value-3 or 4

Chroma—1 or 2

Texture—clay or silty clay

Cg horizon:

Hue-2.5Y or 5Y

Value—3 to 6

Chroma—1 or 2

Texture—clay or silty clay

## 630—Wildwood muck, 0 to 1 percent slopes

## Component Descriptions

## Wildwood and similar soils

Extent: 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over

glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At

the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5

feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July,

August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 5.7 inches

Content of organic matter in the upper 10 inches: 62.0 percent

#### Boash and similar soils

Extent: 4 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Clay loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): At

the surface (April)

Wet soil moisture status is lowest (depth, months): 3.0

feet (August)

Ponding does not occur (months): January, February,

March, December

Ponding is deepest (depth, months): 0.3 foot (April,

May, June, November)

Available water capacity to a depth of 60 inches: 9.6

inches

Content of organic matter in the upper 10 inches: 4.3 percent

#### Dora and similar soils

Extent: 4 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface laver: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained

Parent material: Organic materials over

glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May, June)

Wet soil moisture status is lowest (depth, months): 2.1 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (January, February, July, August, September,

October, November, December)

Ponding is deepest (depth, months): 0.5 foot (March,

April, May, June)

Available water capacity to a depth of 60 inches: 18.3 inches

Content of organic matter in the upper 10 inches: 55.5 percent

#### Espelie and similar soils

Extent: 2 percent of the unit

Geomorphic description: Flats on lake plains; swales

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8

feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June)

Available water capacity to a depth of 60 inches: 7.7 inches

Content of organic matter in the upper 10 inches: 3.0 percent

## Management

Major uses: Wildlife habitat and pasture

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Forest Land" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

#### Woodslake Series

Drainage class: Very poorly drained

Permeability: Very slow Landform: Lake plains

Parent material: Glaciolacustrine deposits

Slope range: 0 to 1 percent

Taxonomic classification: Very fine, smectitic, frigid

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## Typical Pedon

Woodslake clay, 2,300 feet north and 100 feet east of the southwest corner of sec. 1, T. 162 N., R. 36 W.

- Ap—0 to 8 inches; black (N 2/0) clay, very dark gray (N 3/0) dry; weak fine granular structure; friable; common very fine and fine roots; slightly alkaline; clear smooth boundary.
- Bg1—8 to 15 inches; dark gray (5Y 4/1) clay; common medium prominent olive brown (2.5Y 4/3) iron concentrations; weak medium and coarse subangular blocky structure; firm; few very fine roots; slightly alkaline; gradual smooth boundary.
- Bg2—15 to 21 inches; olive gray (5Y 4/2) clay; common fine prominent olive brown (2.5Y 4/4) iron concentrations and common fine and medium faint very dark gray (5Y 3/1) iron depletions; weak coarse subangular blocky structure; firm; few very fine roots; slightly alkaline; gradual smooth boundary.
- Cg1—21 to 36 inches; dark olive gray (5Y 3/2) and dark gray (5Y 4/1) clay; common fine faint olive gray (5Y 4/2) iron depletions; massive; very firm; common medium prominent white (5Y 8/1) soft masses of lime between peds; strongly effervescent; slightly alkaline; gradual wavy boundary.
- Cg2—36 to 63 inches; stratified dark olive gray (5Y 3/2) clay and grayish brown (2.5Y 5/2) silt loam; few fine and medium prominent dark yellowish brown (10YR 4/6) iron concentrations; weak medium and thick platy soil fragments; very firm; common medium rounded white (5Y 8/1) soft masses of lime between plates; strongly effervescent; moderately alkaline; gradual wavy boundary.
- Cg3—63 to 80 inches; stratified dark grayish brown (2.5Y 4/2) clay and grayish brown (2.5Y 5/2) silt loam; common medium prominent dark yellowish brown (10YR 4/6) iron concentrations; weak thick platy soil fragments; very firm; few fine and medium rounded white (2.5Y 8/1) soft masses of lime between plates; moderately alkaline.

### Range in Characteristics

Depth to carbonates: 18 to 21 inches

Thickness of the mollic epipedon: 7 to 9 inches

Ap or A horizon:

Hue-10YR or N

Value—2

Chroma-0 or 1

Texture—clay

Bg horizon:

Hue-2.5Y or 5Y

Value—3 or 4

Chroma—1 or 2

Texture—clay

Cg horizon:

Hue—2.5Y or 5Y Value—3 to 5 Chroma—1 or 2

Texture—clay or clay stratified with silt loam and silt clay loam

# 755—Woodslake clay, 0 to 1 percent slopes

## Component Descriptions

#### Woodslake and similar soils

Extent: 85 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Clay

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 1.6 feet (February, August)

Ponding depth: 0.5 foot all year

Available water capacity to a depth of 60 inches: 7.9

inches

Content of organic matter in the upper 10 inches: 3.4 percent

#### Boash and similar soils

Extent: 8 percent of the unit

Geomorphic description: Swales on lake plains; flats

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Clay loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): At

the surface (April)

Wet soil moisture status is lowest (depth, months): 3.0 feet (August)

" 'Augusi)

Ponding does not occur (months): January, February,

March, December

Ponding is deepest (depth, months): 0.3 foot (April,

May, June, November)

Available water capacity to a depth of 60 inches: 9.6 inches

Content of organic matter in the upper 10 inches: 4.3 percent

### Wildwood and similar soils

Extent: 5 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 5.7 inches

Content of organic matter in the upper 10 inches: 62.0 percent

#### Dora and similar soils

Extent: 2 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May, June)

Wet soil moisture status is lowest (depth, months): 2.1 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (January, February, July, August, September, October, November, December

Ponding is deepest (depth, months): 0.5 foot (March, April, May, June)

Available water capacity to a depth of 60 inches: 18.3 inches

Content of organic matter in the upper 10 inches: 55.5 percent

## Management

Major uses: Pasture and wildlife habitat

For general and detailed information about managing this map unit, see the following sections:

- · "Agronomy" section
- "Forest Land" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

#### Wurtsmith Series

Drainage class: Moderately well drained

Permeability: Rapid Landform: Lake plains

Parent material: Glaciolacustrine deposits

Slope range: 0 to 3 percent

Taxonomic classification: Mixed, frigid Oxyaquic

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## Typical Pedon

Wurtsmith loamy sand, 2,100 feet north and 2,500 feet west of the southeast corner of sec. 12, T. 160 N., R. 38 W.

- A—0 to 3 inches; black (10YR 2/1) loamy sand, very dark gray (10YR 3/1) dry; weak medium subangular blocky structure; very friable; common very fine roots; slightly acid; clear smooth boundary.
- E—3 to 5 inches; dark grayish brown (10YR 4/2) loamy sand; single grain; loose; few very fine roots; 1 percent gravel; slightly acid; clear smooth boundary.
- Bw1—5 to 15 inches; dark yellowish brown (10YR 4/4) sand; single grain; loose; 1 percent gravel; slightly acid; gradual wavy boundary.
- Bw2—15 to 30 inches; yellowish brown (10YR 5/4) sand; single grain; loose; 1 percent gravel; slightly acid; gradual wavy boundary.
- BC—30 to 45 inches; yellowish brown (10YR 5/4) sand; many fine and medium prominent brown or dark brown (7.5YR 4/4) iron concentrations; single grain; loose; 2 percent gravel; slightly acid; gradual wavy boundary.
- C1—45 to 60 inches; light brownish gray (10YR 6/2) sand; common fine distinct yellowish brown (10YR 5/6) iron concentrations; single grain; loose; 1 percent gravel; slightly acid; gradual wavy boundary.
- C2—60 to 76 inches; light olive brown (2.5Y 5/3) sand; common fine prominent yellowish brown (10YR

5/6) iron concentrations; single grain; loose; 8 percent gravel; neutral; gradual wavy boundary.

C3—76 to 80 inches; grayish brown (2.5Y 5/2) sand; common fine prominent yellowish brown (10YR 5/6) iron concentrations; single grain; loose; 10 percent gravel; slightly alkaline.

## Range in Characteristics

Depth to carbonates: More than 60 inches

A horizon:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—loamy sand

Content of rock fragments—0 to 2 percent

E horizon:

Hue—10YR

Value-4 or 5

Chroma—2

Texture—loamy sand or sand

Content of rock fragments—0 to 2 percent

Bw horizon:

Hue—10YR

Value—4 or 5

Chroma—3 or 4

Texture—sand or coarse sand

Content of rock fragments—0 to 10 percent

BC horizon:

Hue—10YR

Value-4 or 5

Chroma—3 or 4

Texture—sand or coarse sand

Content of rock fragments—0 to 10 percent

C horizon:

Hue-10YR or 2.5Y

Value—4 to 6

Chroma-2 to 4

Texture—sand or coarse sand

Content of rock fragments—0 to 10 percent

# 1444—Wurtsmith loamy sand, MAP 22-30, 0 to 3 percent slopes

## **Component Descriptions**

#### Wurtsmith and similar soils

Extent: 85 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (July, August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.6 inches

Content of organic matter in the upper 10 inches: 0.8 percent

#### Meehan and similar soils

Extent: 10 percent of the unit

Geomorphic description: Flats on lake plains; rises on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy sand

Depth to restrictive feature: Very deep (more than 60 inches)

inches)

Drainage class: Somewhat poorly drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 1.5 feet (April)

Wet soil moisture status is lowest (depth, months):
More than 6.7 feet (August)

Pondina: None

Available water capacity to a depth of 60 inches: 4.4 inches

Content of organic matter in the upper 10 inches: 1.4 percent

#### Clearriver and similar soils

Extent: 2 percent of the unit

Geomorphic description: Beach ridges

Position on the landform: Shoulders, backslopes

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained

Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 3.0 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (July, August)

Ponding: None

Available water capacity to a depth of 60 inches: 3.5 inches

Content of organic matter in the upper 10 inches: 0.5 percent

#### Two Inlets and similar soils

Extent: 2 percent of the unit

Geomorphic description: Beach ridges Position on the landform: Shoulders, summits

Slope range: 0 to 6 percent

Texture of the surface layer: Loamy sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Excessively drained Parent material: Beach deposits

Flooding: None

Depth to wet soil moisture status: More than 6.7 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 3.0

Content of organic matter in the upper 10 inches: 0.3 percent

#### Cormant and similar soils

Extent: 1 percent of the unit

Geomorphic description: Flats on lake plains; swales

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.9 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 4.9

Content of organic matter in the upper 10 inches: 3.9 percent

#### Management

Major uses: Forest land and pasture

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Forest Land" section

- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

#### Zimmerman Series

Drainage class: Excessively drained

Permeability: Rapid Landform: Beach ridges

Parent material: Beach deposits Slope range: 1 to 6 percent

Taxonomic classification: Mixed, frigid Argic

Udipsamments

## Typical Pedon

Zimmerman fine sand (fig. 12), 1,350 feet north and 1,600 feet west of the southeast corner of sec. 27, T. 161 N., R. 37 W.

- A—0 to 2 inches; very dark grayish brown (10YR 3/2) fine sand; weak very fine subangular blocky structure parting to weak very fine and fine granular; very friable; common very fine and fine and few medium and coarse roots; moderately acid; clear smooth boundary.
- E—2 to 6 inches; brown (10YR 4/3) fine sand; weak fine subangular blocky structure; very friable; common very fine and fine and few medium and coarse roots; slightly acid; clear smooth boundary.
- Bw1—6 to 11 inches; dark yellowish brown (10YR 4/4) fine sand; weak fine and medium subangular blocky structure; very friable; few fine and medium roots; slightly acid; clear wavy boundary.
- Bw2—11 to 17 inches; yellowish brown (10YR 5/4) fine sand; weak medium subangular blocky structure; very friable; few fine and medium roots; slightly acid; gradual wavy boundary.
- E'&Bt1—17 to 51 inches; light yellowish brown (10YR 6/4) fine sand (E'); single grain; loose; few irregular discontinuous very weakly cemented bands of dark brown (7.5YR 4/4) loamy fine sand <sup>1</sup>/<sub>16</sub> to <sup>1</sup>/<sub>4</sub> inch thick (Bt); 1 percent gravel; neutral; gradual wavy boundary.
- E'&Bt2—51 to 66 inches; brown (10YR 5/3) fine sand (E'); single grain; loose; few irregular discontinuous very weakly cemented bands of dark brown (7.5YR 4/4) loamy fine sand ½ inch thick (Bt); total thickness of the bands is 1½ inches; 3 percent gravel and 2 percent cobbles; neutral; gradual wavy boundary.
- C—66 to 80 inches; pale brown (10YR 6/3) fine sand; single grain; loose; neutral.

## Range in Characteristics

Depth to carbonates: More than 60 inches

A horizon:

Hue—10YR

Value—3

Chroma—1 or 2

Texture—fine sand

E horizon:

Hue—10YR

Value—4 to 6

Chroma—2 to 4

Texture—fine sand or loamy fine sand Content of rock fragments—0 to 1 percent

Bw horizon:

Hue—10YR

Value—4 or 5

Chroma—3 to 6

Texture—fine sand

Content of rock fragments—0 to 5 percent

E' part of E'&Bt horizon:

Hue—10YR

Value—4 to 6

Chroma-2 to 4

Texture—fine sand or loamy fine sand

Content of rock fragments—0 to 1 percent

Bt part of E'&Bt horizon:

Hue-10YR or 7.5YR

Value—4 or 5

Chroma—4 to 6

Texture—fine sand or loamy fine sand

Content of rock fragments—0 to 1 percent

C horizon:

Hue-10YR

Value—6

Chroma—3

Texture—fine sand or sand

Content of rock fragments—0 to 5 percent

# 158B—Zimmerman fine sand, 1 to 6 percent slopes

## Component Descriptions

#### Zimmerman and similar soils

Extent: 85 percent of the unit

Geomorphic description: Beach ridges

Position on the landform: Shoulders, summits

Slope range: 1 to 6 percent

Texture of the surface layer: Fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Excessively drained Parent material: Beach deposits

Flooding: None

Depth to wet soil moisture status: More than 6.7 feet

all year Ponding: None

Available water capacity to a depth of 60 inches: 4.8

inches

Content of organic matter in the upper 10 inches: 0.6

percent

#### Hiwood and similar soils

Extent: 6 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 1 to 6 percent

Texture of the surface layer: Fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Moderately well drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet (July, August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.7

Content of organic matter in the upper 10 inches: 0.6 percent

## Two Inlets and similar soils

Extent: 6 percent of the unit

Geomorphic description: Beach ridges Position on the landform: Shoulders, summits

Slope range: 0 to 6 percent

Texture of the surface layer: Loamy sand

Depth to restrictive feature: Very deep (more than 60

inches'

Drainage class: Excessively drained Parent material: Beach deposits

Flooding: None

Depth to wet soil moisture status: More than 6.7 feet

all year Ponding: None

Available water capacity to a depth of 60 inches: 3.0

inches

Content of organic matter in the upper 10 inches: 0.3 percent

## Redby and similar soils

Extent: 3 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Somewhat poorly drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 1.5 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.8

Content of organic matter in the upper 10 inches: 0.6 percent

## Management

Major uses: Forest land

For general and detailed information about managing this map unit, see the following sections:

"Agronomy" section

• "Forest Land" section

• "Recreation" section

• "Wildlife Habitat" section

• "Engineering" and "Soil Properties" sections

## Zippel Series

Drainage class: Poorly drained Permeability: Moderately rapid

Landform: Lake plains

Parent material: Glaciolacustrine deposits

Slope range: 0 to 2 percent

Taxonomic classification: Coarse-silty, mixed,

superactive, calcareous, frigid Typic Endoaquolls

### Typical Pedon

Zippel very fine sandy loam, 300 feet south and 600 feet east of the northwest corner of sec. 20, T. 163 N., R. 36 W.

Ap—0 to 10 inches; black (10YR 2/1) very fine sandy loam, very dark gray (10YR 3/1) dry; weak fine and medium subangular blocky structure; very friable; many very fine and fine roots; slightly alkaline; abrupt smooth boundary.

Bg—10 to 16 inches; grayish brown (2.5Y 5/2) very fine sandy loam; common fine distinct light olive brown (2.5Y 5/4) iron concentrations; weak fine and medium subangular blocky structure; very

friable; many very fine roots; strongly effervescent; slightly alkaline; clear smooth boundary.

Cg1—16 to 30 inches; light brownish gray (2.5Y 6/2), stratified very fine sandy loam and very fine sand; few fine prominent yellowish brown (10YR 5/6) and common fine distinct light olive brown (2.5Y 5/4) iron concentrations; weak thick platy soil fragments; very friable; common very fine and fine roots; few fine and medium rounded light gray (2.5Y 7/2) soft masses of carbonate between peds; strongly effervescent; moderately alkaline; clear wavy boundary.

Cg2—30 to 52 inches; light brownish gray (2.5Y 6/2) and grayish brown (2.5Y 5/2), stratified very fine sandy loam, very fine sand, and silt loam; common fine and medium distinct light olive brown (2.5Y 5/4) and common fine and medium prominent dark yellowish brown (10YR 4/6) iron concentrations; weak thick platy soil fragments; very friable; common fine and medium rounded light gray (2.5Y 7/2) soft masses of carbonate between peds; strongly effervescent; moderately alkaline; gradual wavy boundary.

Cg3—52 to 80 inches; light brownish gray (2.5Y 6/2) and grayish brown (2.5Y 5/2), stratified very fine sandy loam, very fine sand, and silt loam; common medium and coarse prominent dark yellowish brown (10YR 4/6), few medium prominent dark brown (7.5YR 3/4), and common medium and coarse distinct light olive brown (2.5Y 5/4) iron concentrations; weak medium and thick platy soil fragments; very friable; few fine rounded black (N 2/0) iron-manganese concretions and common fine and medium rounded light gray (2.5Y 7/2) soft masses of carbonate between peds; strongly effervescent; moderately alkaline.

#### Range in Characteristics

Depth to carbonates: 0 to 10 inches
Thickness of the mollic epipedon: 7 to 10 inches

Ap horizon:

Hue—10YR Value—2 or 3 Chroma—1 or 2

Texture—very fine sandy loam

Ba horizon:

Hue—2.5Y Value—3 to 5 Chroma—2

Texture—very fine sand, loamy very fine sand, very fine sandy loam, or silt loam

Cg horizon:

Hue—2.5Y or 5Y Value—5 to 7 Chroma—2

Texture—very fine sand, loamy very fine sand, very fine sandy loam, silt loam, or stratified with these textures

# 568—Zippel very fine sandy loam, 0 to 2 percent slopes

## **Component Descriptions**

#### Zippel and similar soils

Extent: 85 percent of the unit

Geomorphic description: Flats on lake plains; swales

on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Very fine sandy loam Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June)

Available water capacity to a depth of 60 inches: 10.9 inches

Content of organic matter in the upper 10 inches: 4.0 percent

## Augsburg, depressional, and similar soils

Extent: 5 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Mucky very fine sandy

loam

Depth to restrictive feature: Very deep (more than 60

inches)

Drainage class: Very poorly drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At

the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 3.0 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September, October)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, November, December)

Available water capacity to a depth of 60 inches: 10.1 inches

Content of organic matter in the upper 10 inches: 6.1 percent

## Sago and similar soils

Extent: 5 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 13.4 inches

Content of organic matter in the upper 10 inches: 72.5 percent

#### Skime and similar soils

Extent: 5 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 4 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60

Drainage class: Moderately well drained Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (July, August)

Ponding: None

Available water capacity to a depth of 60 inches: 5.1 inches

Content of organic matter in the upper 10 inches: 0.9 percent

### Management

Major uses: Cropland

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- · "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

## **Use and Management of the Soils**

This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help to prevent soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavioral characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis in predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops and pasture; as woodland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreational facilities; and for wildlife habitat. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment. The survey can help planners to maintain or create a land use pattern in harmony with the natural soil.

Contractors can use this survey to locate sources of sand and gravel, roadfill, and topsoil. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, playgrounds, lawns, and trees and shrubs.

## **Agronomy**

Allan R. Gustafson, Jr., area resource conservationist, Natural Resources Conservation Service, assisted in the preparation of this section

General management needed for crops and for hay and pasture is suggested in this section. The system

of land capability classification used by the Natural Resources Conservation Service is explained, the estimated yields of the main crops and hay and pasture plants are listed for each soil, and prime farmland is described.

Planners of management systems for individual fields or farms should consider obtaining specific information from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

Of the nearly 650,000 acres of agricultural land in Roseau County, approximately 75 percent is utilized for crop production, 15 percent for hay production, and about 10 percent for pasture (Minnesota Agricultural Statistics Service, 1996). The principal small grain crops are wheat, barley, and oats. Canola, sunflowers, and flax are the main oilseed crops grown in the county. The acreage used for canola is increasing annually (fig. 13). Specialty crops are an important part of the county's agricultural industry. Bluegrass, timothy, and reed canarygrass are grown for seed production.

Various grasses and legumes are grown in the county. The poorly drained soils support moisture-tolerant grasses, such as creeping foxtail, timothy, and



Figure 13.—Canola growing in an area of Zippel very fine sandy loam, 0 to 2 percent slopes.

reed canarygrass, and legumes, such as birdsfoot trefoil, red clover, ladino clover, and alsike clover. The better drained soils support a wider range of species, including alfalfa, crown vetch, orchardgrass, and bluegrass, in addition to moisture-tolerant species.

An extensive network of judicial and private ditches has been installed to remove surface water and make agricultural production possible throughout most of the county. In most areas, however, wetness continues to be a major obstacle. Adequate drainage encourages good root development by allowing the free movement of air and water through the soil. Managing drainage in compliance with wetland regulations may require extra planning and special permits.

Wind erosion can be a problem throughout the county. Sandy soils, such as Hiwood soils, or soils that have a sandy mantle, such as Eckvoll and Enstrom soils, are very susceptible to soil blowing (fig. 14). Loss of the surface layer through erosion reduces productivity and results in the sedimentation of drainage ditches and streams. Most soil blowing occurs during fall and spring in areas where the ground is bare. Conservation tillage, field windbreaks, crop rotation, and crop residue management help to

control soil blowing. Leaving fields rough and cloddy in the fall can also reduce the hazard of soil blowing.

Tillage can control weeds and help to prepare a suitable seedbed. Good tilth increases the rate of water infiltration and provides a favorable seedbed. Frequent tillage can damage soil structure. Working the soil when it is too wet can result in compaction and thus can damage soil structure (fig. 15). Including alfalfa in the crop rotation and returning crop residue to the soil improve tilth. When a tillage system is selected, soil texture, drainage class, slope, and cropping history should be considered. Maintaining good tilth helps to maximize productivity and improves the longevity of the soil resource.

Good pasture management includes applying fertilizer, using a system of pasture rotation, deferring grazing during wet periods, using proper stocking rates, and controlling brush and weeds. Pasture can be improved by reseeding a more suitable or productive species. The type of soil and the drainage conditions should be considered when forage is selected for seeding.

Soil fertility varies across the county. Differences in vegetation and parent material are largely responsible for this variation (fig. 16). Fertilizer application should



Figure 14.—An area of Eckvoll loamy fine sand, 0 to 3 percent slopes. Using a system of minimum tillage and returning crop residue to the soil can improve the content of organic matter and reduce the hazard of soil blowing in areas of this soil. The lower lying, poorly drained Auganaush soil is in the darker areas.



Figure 15.—Tire ruts in an area of Boash clay loam, 0 to 2 percent slopes. A high content of clay makes this soil susceptible to compaction.

be based on the results of soil tests. The need for fertilizer depends on the type of soil, past management, and the nutrient demands of the crop to be grown.

Organic soils, such as Cathro, Tacoosh, and Sax soils, are quite extensive in the county. The thickness of the organic layer ranges from only about 8 inches to more than 10 feet, depending on the soil type. Organic soils that have been drained may be used for small grain crops but are more commonly used for specialty crops, such as bluegrass seed (fig. 17). Forage plants that can tolerate wetness can produce excellent yields in areas of these soils.

The western part of the county is dominated by Nereson, Percy, and Skagen soils. These soils formed in glacial till that has been only slightly altered by the waters of Glacial Lake Agassiz. A substantial amount of the surface in these areas is covered by rock fragments. The rocks are primarily cobble sized (3 to 10 inches). Many fields are picked and cleared on an

annual basis. Areas that are too cobbly, stony, or bouldery are used as permanent pasture.

Some of the better agricultural soils in the county formed in the silty lacustrine sediments of Glacial Lake Agassiz. Borup, Wabanica, and Zippel soils, for example, have favorable permeability and waterholding characteristics and can be easily worked. In areas where drainage is adequate, these types of soils can be very productive. Grano, Mustinka, and Boash soils formed in deep-water, clayey glaciolacustrine deposits and in clayey glaciolacustrine deposits over till. These soils are very fertile, but they are the last to dry out in the spring and can be difficult to work. Under the right weather conditions, these soils can be the most productive in the county.

Soils that formed in sandy and gravelly sediments are used mostly for pasture and hay production. Hiwood and Skime soils are examples. In the better drained areas, droughty conditions limit production



Figure 16.—An area of Percy loam, 0 to 2 percent slopes. Deep plowing has exposed the lighter colored subsoil, which has a very high content of lime. Lime affects soil pH and the availability of nutrients.

during the summer. These soils are sometimes cropped, but yields are generally low. In many areas these soils occur as small islands in larger fields of soils with heavier textures.

Some soils formed in a combination of ice and water deposits. Strandquist soils, for example, have a mantle of gravelly sand over loamy glacial till. About 20 percent of the soils in the county have layers of contrasting textures. Although the Strandquist soils are poorly drained, yields may be reduced if crops experience a water deficit during the summer after the water table drops.

Water erosion is not a major concern in the survey area. It can be a hazard in the gently sloping and moderately sloping areas of Baudette, Croke, and Garnes soils that are adjacent to the rivers.

## **Cropland Management Considerations**

The management concerns affecting the use of the detailed soil map units in the survey area for crops are shown in table 6. The main concerns in managing nonirrigated cropland are conserving moisture, controlling wind erosion and water erosion, and maintaining soil fertility.

Conserving moisture consists primarily of reducing the evaporation and runoff rates and increasing the water infiltration rate. Applying conservation tillage and conservation cropping systems, farming on the contour, stripcropping, establishing field windbreaks, and leaving crop residue on the surface conserve moisture.

Generally, a combination of several practices is needed to control *wind erosion* and *water erosion*. Conservation tillage, stripcropping, field windbreaks, contour farming, conservation cropping systems, crop residue management, terraces, diversions, and grassed waterways help to prevent excessive soil loss.

Measures that are effective in maintaining *soil fertility* include applying fertilizer, both organic and inorganic, including manure; incorporating crop residue or green manure crops into the soil; and using proper crop rotations. Controlling erosion helps to prevent the loss of organic matter and plant nutrients and thus helps to maintain productivity, although the level of fertility can be reduced even in areas where erosion is controlled. All soils used for nonirrigated crops respond well to applications of fertilizer.

Some of the considerations shown in the table cannot be easily overcome. These are *channels*, *flooding*, *gullies*, and *ponding*.

Additional considerations are as follows:

Lime content, limited available water capacity,
potential poor tilth and compaction, and restricted
permeability.—These limitations can be minimized by
incorporating green manure crops, manure, or crop
residue into the soil; applying a system of
conservation tillage; and using conservation cropping
systems. Also, crops may respond well to additions of
phosphate fertilizer to soils that have a high content of
lime.

Potential for ground-water contamination.—The proper use of nutrients and pesticides can reduce the risk of ground-water contamination.



Figure 17.—Bluegrass harvest in an area of Tacoosh mucky peat, MAP 22-30, 0 to 1 percent slopes. Bluegrass is grown for seed on some of the peatland in the county.

Potential for surface-water contamination.—The risk of surface-water contamination can be reduced by the proper use of nutrients and pesticides and by conservation farming practices that reduce the runoff rate.

*Surface crusting.*—This limitation retards seedling development after periods of heavy rainfall.

Surface rock fragments.—This limitation causes rapid wear of tillage equipment. It cannot be easily overcome.

Surface stones.—Stones or boulders on or near the surface can hinder normal tillage unless they are removed.

Salt content.—In areas where this is a limitation, only salt-tolerant crops should be grown.

On irrigated soils the main management concerns are efficient water use, nutrient management, control of erosion, pest and weed control, and timely planting and harvesting for a successful crop. An irrigation system that provides optimum control and distribution of water at minimum cost is needed. Overirrigation wastes water, leaches plant nutrients, and causes erosion. Also, it can increase wetness and soil salinity.

#### **Explanation of Criteria**

Acid soil.—The pH is less than 6.1.

*Channeled.*—The word "channeled" is included in the map unit name.

*Dense layer.*—The bulk density is 1.80 g/cc or greater within the soil profile.

Depth to rock.—The depth to bedrock is less than 40 inches.

*Eroded.*—The word "eroded" is included in the map unit name.

Excessive permeability.—Saturated hydraulic conductivity is 42 micrometers per second or more within the soil profile.

*Flooding.*—Flooding is occasional, frequent, or very frequent.

*Gullied.*—The word "gullied" is included in the map unit name.

High content of organic matter.—The surface layer has more than 20 percent organic matter.

*Lime content.*—The pH is 7.4 or more in the surface layer, or the wind erodibility group is 4L.

Limited available water capacity.—The available water capacity calculated to a depth of 60 inches or to a root-limiting layer is 6 inches or less.

Limited content of organic matter.—The content of organic matter is 2 percent or less in the surface layer.

*Ponding.*—Ponding duration is assigned to the map unit component. Water is above the surface.

Potential poor tilth and compaction.—The content of clay is 27 percent or more in the surface layer.

Potential for ground-water contamination (by nutrients or pesticides).—The depth to a zone in which the soil moisture status is wet is 4 feet or less, the saturated hydraulic conductivity of any layer is more than 42 micrometers per second, or the depth to bedrock is less than 60 inches.

Potential for surface-water contamination (by nutrients or pesticides).—The map unit component is occasionally, frequently, or very frequently flooded, is subject to ponding, is assigned to hydrologic group C or D and has a slope of more than 2 percent, is assigned to hydrologic group A and has a slope of more than 6 percent, or is assigned to hydrologic group B, has a slope of 3 percent or more, and has a K factor of more than 0.17.

Restricted permeability.—Permeability is less than 0.42 micrometer per second within the soil profile.

Salt content.—The electrical conductivity is 4 or more in the surface layer or 8 or more within a depth of 30 inches.

Slope (equipment limitation).—The slope is more than 15 percent.

Surface crusting.—The content of clay is 27 percent or more and the content of organic matter is 2 percent or less in the surface layer.

Surface rock fragments (equipment limitation).— The terms describing the texture of the surface layer include any rock fragment modifier, except for gravelly, channery, stony, very stony, extremely stony, bouldery, very bouldery, and extremely bouldery.

Surface stones (equipment limitation).—The word "stony" or "bouldery" is included in the description of the surface layer, or 0.01 percent or more of the surface is covered by boulders.

Water erosion.—Either the slope is 6 percent or more, or the slope is more than 3 percent and less than 6 percent and the surface layer is not sandy.

Wet soil moisture status.—A zone in which the soil moisture status is wet is within 2.5 feet of the surface.

Wind erosion.—The wind erodibility group is 1, 2, 3, or 4L.

## **Crop Yield Estimates**

The average yields per acre that can be expected of the principal crops under a high level of management are shown in table 7. In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors. The land capability classification of map units in the survey area also is shown in the table.

The yields are based mainly on the experience and

records of farmers, conservationists, and extension agents. Available yield data from nearby counties and results of field trials and demonstrations also are considered.

The management needed to obtain the indicated yields of the various crops depends on the kind of soil and the crop. Management can include drainage, erosion control, and protection from flooding; the proper planting and seeding rates; suitable high-yielding crop varieties; appropriate and timely tillage; control of weeds, plant diseases, and harmful insects; favorable soil reaction and optimum levels of nitrogen, phosphorus, potassium, and trace elements for each crop; effective use of crop residue, barnyard manure, and green manure crops; and harvesting that ensures the smallest possible loss.

The estimated yields reflect the productive capacity of each soil for each of the principal crops. Yields are likely to increase as new production technology is developed. The productivity of a given soil compared with that of other soils, however, is not likely to change.

Crops other than those shown in the table are grown in the survey area, but estimated yields are not listed because the acreage of such crops is small. The local office of the Natural Resources Conservation Service or of the Cooperative Extension Service can provide information about the management and productivity of the soils for those crops.

## **Pasture and Hayland Interpretations**

Under good management, proper grazing is essential for the production of high-quality forage, stand survival, and erosion control. Proper grazing helps plants to maintain sufficient and generally vigorous top growth during the growing season. Brush control is essential in many areas, and weed control generally is needed. Rotation grazing and renovation also are important management practices.

Pasture yield estimates are provided in table 8. Some of the yields are expressed as animal unit months (AUM), or the amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.

The local office of the Natural Resources Conservation Service or of the Cooperative Extension Service can provide information about forage yields other than those shown in table 8.

## **Land Capability Classification**

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops.

Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not take into account major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for woodland or for engineering purposes.

In the capability system, soils generally are grouped at three levels—capability class, subclass, and unit (USDA, 1961). These categories indicate the degree and kinds of limitations affecting mechanized farming systems that produce the more commonly grown field crops, such as corn, small grain, cotton, hay, and field-grown vegetables. Only class and subclass are used in this survey.

Capability classes, the broadest groups, are designated by the numbers 1 through 8. The numbers indicate progressively greater limitations and narrower choices for practical use.

If properly managed, soils in classes 1, 2, 3, and 4 are suitable for the mechanized production of commonly grown field crops and for pasture and woodland. The degree of the soil limitations affecting the production of cultivated crops increases progressively from class 1 to class 4. The limitations can affect levels of production and the risk of permanent soil deterioration caused by erosion and other factors.

Soils in classes 5, 6, and 7 are generally not suited to the mechanized production of commonly grown field crops without special management, but they are suitable for plants that provide a permanent cover, such as grasses and trees. The severity of the soil limitations affecting crops increases progressively from class 5 to class 7.

Areas in class 8 are generally not suitable for crops, pasture, or woodland without a level of management that is impractical. These areas may have potential for other uses, such as recreational facilities and wildlife habitat.

Capability subclasses identify the dominant kind of limitation in the class. They are designated by adding a small letter, e, w, s, or c, to the class numeral, for example, 2e. The letter e shows that the main hazard is the risk of erosion unless a close-growing plant cover is maintained; w shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial

drainage); *s* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c*, used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry.

There are no subclasses in class 1 because the soils of this class have few limitations. Class 5 contains only the subclasses indicated by w, s, or c because the soils in class 5 are subject to little or no erosion. They have other limitations that restrict their use mainly to pasture, woodland, wildlife habitat, or recreation.

The capability classification of map units in the survey area is given in tables 7 and 8 at the end of this section.

#### **Prime Farmland**

Prime farmland is of major importance in meeting the Nation's short- and long-range needs for food and fiber. The acreage of high-quality farmland is limited, and the U.S. Department of Agriculture recognizes that government at local, State, and Federal levels, as well as individuals, must encourage and facilitate the wise use of our Nation's prime farmland.

Prime farmland soils, as defined by the U.S. Department of Agriculture, are soils that are best suited to food, feed, forage, fiber, and oilseed crops. Such soils have properties that favor the economic production of sustained high yields of crops. The soils need only to be treated and managed by acceptable farming methods. An adequate moisture supply and a sufficiently long growing season are required. Prime farmland soils produce the highest yields with minimal expenditure of energy and economic resources, and farming these soils results in the least damage to the environment.

Prime farmland soils may presently be used as cropland, pasture, or woodland or for other purposes. They either are used for food and fiber or are available for these uses. Urban or built-up land, public land, and water areas cannot be considered prime farmland. Urban or built-up land is any contiguous unit of land 10 acres or more in size that is used for such purposes as housing, industrial, and commercial sites, sites for institutions or public buildings, small parks, golf courses, cemeteries, railroad yards, airports, sanitary landfills, sewage treatment plants, and water-control structures. Public land is land not available for farming in National forests, National parks, military reservations, and State parks.

Prime farmland soils commonly receive an adequate and dependable supply of moisture from precipitation or irrigation. The temperature and growing season are favorable, and the level of acidity or

alkalinity and the content of salts and sodium are acceptable. The soils have few, if any, rocks and are permeable to water and air. They are not excessively erodible or saturated with water for long periods, and they are not frequently flooded during the growing season or are protected from flooding. Slopes range mainly from 0 to 6 percent.

Soils in which a saturated zone is high in the profile or soils that are subject to flooding may qualify as prime farmland where these limitations are overcome by drainage measures or flood control. Onsite evaluation is necessary to determine the effectiveness of corrective measures. More information about the criteria for prime farmland can be obtained at the local office of the Natural Resources Conservation Service.

A recent trend in land use has been the conversion of prime farmland to urban and industrial uses. The loss of prime farmland to other uses puts pressure on lands that are less productive than prime farmland.

About 292,000 acres, or nearly 27 percent of the survey area, meets the requirements for prime farmland

The map units in the survey area that meet the requirements for prime farmland are listed in table 9. This list does not constitute a recommendation for a particular land use. On some soils included in the table, measures that overcome limitations are needed. The need for these measures is indicated in parentheses after the map unit name. The location of each map unit is shown on the detailed soil maps. The soil qualities that affect use and management are described in the section "Soil Series and Detailed Soil Map Units."

#### **Erosion Factors**

Soil erodibility (K) and soil-loss tolerance (T) factors are used in an equation that predicts the amount of soil lost through water erosion in areas of cropland. The procedure for predicting soil loss is useful in guiding the selection of soil and water conservation practices. The erosion factors are shown in table 24.

#### Soil Erodibility (K) Factor

The soil erodibility (K) factor indicates the susceptibility of a soil to sheet and rill erosion by water. The soil properties that influence erodibility are those that affect the infiltration rate, the movement of water through the soil, and the water storage capacity of the soil and those that allow the soil to resist dispersion, splashing, abrasion, and the transporting forces of rainfall and runoff. The most important soil properties are the content of silt plus very fine sand,

the content of sand coarser than very fine sand, the content of organic matter, soil structure, and permeability.

#### Fragment-Free Soil Erodibility (Kf) Factor

This is one of the factors used in the Revised Universal Soil Loss Equation. It shows the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

## Soil-Loss Tolerance (T) Factor

The soil-loss tolerance (T) factor is an estimate of the maximum annual rate of soil erosion that can occur over a sustained period without affecting crop productivity. The rate is expressed in tons of soil loss per acre per year. Ratings of 1 to 5 are used, depending on soil properties and prior erosion. The criteria used in assigning a T factor to a soil include maintenance of an adequate rooting depth for crop production, potential reduction of crop yields, maintenance of water-control structures affected by sedimentation, prevention of gullying, and the value of nutrients lost through erosion.

### **Wind Erodibility Groups**

Wind erodibility is directly related to the percentage of dry, nonerodible surface soil aggregates larger than 0.84 millimeter in diameter. From this percentage, the wind erodibility index (I) factor is determined. This factor is an expression of the stability of the soil aggregates, or the extent to which they are broken down by tillage and the abrasion caused by windblown soil particles. Soils are assigned to wind erodibility groups (WEG) having similar percentages of dry soil aggregates larger than 0.84 millimeter. The wind erodibility groups and wind erodibility index factors are listed in table 24.

Additional information about wind erodibility groups and K, Kf, T, and I factors can be obtained from local offices of the Natural Resources Conservation Service or the Cooperative Extension Service.

### Windbreaks and Environmental Plantings

Scott A. Johnson, district manager, Roseau County Conservation District, assisted in the preparation of this section.

Windbreaks can be effective in reducing the hazard of soil blowing in Roseau County. Species selection should be based on compatibility with soil type. Species survival and growth rates are variable and highly dependent on soil conditions and on weed control.

Windbreaks protect livestock, buildings, and yards

from wind and snow. They also protect fruit trees and gardens, and they furnish habitat for wildlife. Several rows of low- and high-growing broadleaf and coniferous trees and shrubs provide the most protection.

Field windbreaks are narrow plantings made at right angles to the prevailing wind and at specific intervals across the field. The interval depends on the erodibility of the soil. Field windbreaks protect cropland and crops from wind, help to keep snow on the fields, and provide food and cover for wildlife.

Environmental plantings help to beautify and screen houses and other buildings and to abate noise. The plants, mostly evergreen shrubs and trees, are closely spaced. To ensure plant survival, a healthy planting stock of suitable species should be planted properly on a well prepared site and maintained in good condition.

Windbreaks are often planted on land that did not originally support trees. Knowledge of how trees perform on such land can be gained only by observing and recording the performance of trees that have been planted and have survived. Many popular windbreak species are not indigenous to the areas in which they are planted.

Each tree or shrub species has certain climatic and physiographic limits. Within these parameters, a tree or shrub may grow well or grow poorly, depending on the characteristics of the soil. Each tree or shrub has definable potential heights in a given physiographic area and under a given climate. Accurate definitions of potential heights are necessary when a windbreak is planned and designed.

Table 10 shows the height that locally grown trees and shrubs are expected to reach in 20 years on various soils. The estimates in this table are based on measurements and observation of established plantings that have been given adequate care. They can be used as a guide in planning windbreaks and screens. Additional information on planning windbreaks and screens and planting and caring for trees and shrubs can be obtained from local offices of the Natural Resources Conservation Service or the Cooperative Extension Service or from a nursery.

## Windbreak Suitability Groups

Windbreak suitability groups consist of soils in which the kinds and degrees of the hazards and limitations that affect the survival and growth of trees and shrubs in windbreaks are about the same. The windbreak suitability groups assigned to the soils in the survey area are listed in table 11. The groups are described in the following paragraphs.

Group 1 consists of soils that are somewhat poorly

drained or moderately well drained, are rapidly permeable to moderately slowly permeable, and do not have free carbonates in the upper 20 inches.

Group 1K consists of soils that are somewhat poorly drained or moderately well drained, are rapidly permeable to moderately slowly permeable, and have free carbonates within 20 inches of the surface. These soils may be very slightly saline or slightly saline (the electrical conductivity is 2 to 8).

*Group 2* consists of poorly drained soils that have been artificially drained and do not have free carbonates in the upper 20 inches. Permeability varies.

Group 2K consists of poorly drained or very poorly drained soils that have been artificially drained and have free carbonates within 20 inches of the surface. Permeability varies. These soils may be very slightly saline or slightly saline (the electrical conductivity is 2 to 8).

Group 2H consists of very poorly drained soils that have been artificially drained and have more than 16 inches of organic material. Permeability varies.

*Group 2W* consists of very poorly drained soils that are subject to ponding and have been artificially drained. It includes soils that have an organic surface layer up to 16 inches thick. Permeability varies.

Group 3 consists of soils that are well drained or moderately well drained and are loamy or silty throughout. Permeability is moderate or moderately slow. These soils do not have free carbonates in the upper 20 inches.

Group 4 consists of soils that are well drained, moderately well drained, or somewhat poorly drained and have a silty or loamy surface layer and a clayey subsoil. Permeability is slow or very slow.

Group 4C consists of soils that are well drained, moderately well drained, or somewhat poorly drained and have a clayey surface layer and subsoil. Permeability is slow or very slow.

Group 4F consists of soils that are well drained, moderately well drained, or somewhat poorly drained and have a substratum of dense till. Permeability is slow or very slow.

Group 5 consists of soils that are excessively drained to moderately well drained and have a moderate available water capacity. These soils are dominantly fine sandy loam or sandy loam, but some are sandy in the upper part and loamy in the lower part.

Group 6G consists of excessively drained to moderately well drained soils that are loamy in the upper part and have sand or sand and gravel at a depth of 20 to 40 inches. These soils have a low or moderate available water capacity.

Group 6D consists of excessively drained to moderately well drained, loamy soils that have bedrock at a depth of 20 to 40 inches. These soils have a low or moderate available water capacity.

Group 7 consists of excessively drained to well drained soils that are dominantly loamy fine sand or coarser textured and are shallow to sand or to sand and gravel. These soils have a low available water capacity.

*Group 8* consists of excessively drained to well drained, loamy soils that have free carbonates within 20 inches of the surface.

*Group 9W* consists of soils that are somewhat poorly drained, poorly drained, or very poorly drained and are moderately saline (the electrical conductivity is 8 to 16).

Group 10 consists of soils or miscellaneous areas that generally are not suitable for windbreaks. One or more characteristics, such as soil depth, texture, wetness, available water capacity, or slope, limit the planting, survival, or growth of trees and shrubs.

#### Forest Land

Bob Wennerstrand, Warroad area forester, Minnesota Department of Natural Resources, and Steve Johnson, Wannaska forestry technician, Minnesota Department of Natural Resources, assisted in the preparation of this section.

Roseau County is in a transition or tension zone between tall grass prairie to the west and northern mixed forest to the east. The soils in the county reflect the slow westward advancement of forest vegetation since the last ice age. Prior to permanent settlement, the county was heavily forested in the east, and the west supported aspen with fingers of prairie brushland and sedge meadows.

Wildfire helped to create this pattern. Rivers and streams were natural barriers to wildfire. They protected forests while allowing fire to maintain the prairie. Along with settlement came ditches, fields, pasture, roads, and the use of fire to clear agricultural land. Repeated frequent fire eliminated the conifer component and encouraged aspen. Part of the great marsh, north of the railroad between Roseau and Warroad, originally was tree-covered but is now open as a result of numerous fires sweeping over the area. Prairie vegetation, dependent on fire for sustenance, was also affected (Buell and Buell, 1959). In time, ditches, fields, and roads served as additional barriers to wildfire. As a result of improved drainage and a lower incidence of wildfire, aspen encroachment into the brushland and grassland prairie intensified.

About 220,000 acres in Roseau County is forested. About 34 percent of the forest land is privately owned,

and 66 percent is publicly owned (USDA, 1990). Harvested timber is primarily marketed for paper pulp, waferboard, and small sawlogs. Forest cover and productivity are influenced significantly by soil drainage, pH, fertility, and water-holding capacity. Soil has a profound effect on whether or not a particular species can be grown with success. It affects natural regeneration, planting options, plant competition, windthrow, and timber harvest.

Aspen is the dominant forest type on mineral soils in Roseau County. This species is adapted to a wide range of soils. In the eastern part of the county, aspen stands support a mix of balsam fir, white spruce, and jack pine. In the western part of the county, aspen grows in nearly pure stands. On wet sites, quaking aspen gives way to balsam poplar and black ash. On the higher ground along rivers and on remnant beach ridges of Glacial Lake Agassiz, aspen gives way to bur oak. The productivity of bur oak is limited in the flatter areas because of wetness.

Jack pine is the dominant species on the coarse textured, better drained soils in the eastern part of the county. This species makes up about 15 percent of the forest land in the county. Natural red pine exists as a component of jack pine stands but has been planted in pure and mixed stands on a considerable acreage (fig. 18).

Swamp conifers, including black spruce, tamarack, and northern whitecedar, make up about 20 percent of the forest land in the county. Productivity varies greatly on the organic soils, due mostly to differences in water movement and water chemistry (Boelter, 1955; USDA, 1977). Some vegetative patterns have been permanently altered by the judicial ditch network, land clearing, and wildfire.

## **Forest Productivity**

Information about the potential productivity of map unit components for merchantable or *common trees* is provided in table 12.

The potential productivity of a component is expressed as a site index and as a volume number.

The *site index* is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. Commonly grown trees are those that woodland managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability.

The *volume of wood fiber*, a number, is the yield likely to be produced by the most important trees. This number, expressed as cubic feet per acre per year,



Figure 18.—A clearcut in an area of Wurtsmith loamy sand, MAP 18-22, 0 to 3 percent slopes. Most areas of this soil are forested, and jack pine, red pine, and quaking aspen are the major species. This site will be replanted with red pine or jack pine.

indicates the amount of wood fiber produced in a fully stocked, even-aged stand.

*Trees to manage* are those that are suitable for commercial wood production.

# **Forest Land Management Considerations**

Information about the hazards and limitations that should be considered in areas used as forest land are given in tables 13, 14, 15, and 16.

# **Forest Land Harvest Equipment Considerations**

Table 13 lists the management considerations affecting the use of harvesting equipment.

Considerations shown in the table are as follows:

*Slope.*—The upper slope limit is more than 15 percent.

Flooding.—The map unit component is frequently flooded.

Wetness.—The map unit component is somewhat poorly drained, poorly drained, or very poorly drained or has a perched zone in which the soil moisture status is wet (any drainage class).

Depth to hard rock.—The depth to hard bedrock is less than 10 inches.

Rubbly surface.—The word "rubbly" is in the map unit name.

Surface stones.—The words "extremely stony" are included in the description of the surface layer, or 3 percent or more of the surface is covered with stones.

Surface boulders.—The word "bouldery" is included in the description of the surface layer, or 0.01 percent or more of the surface is covered with boulders.

*Areas of rock outcrop.*—The words "Rock outcrop" are in the map unit name.

Susceptible to rutting and wheel slippage (low strength).—The AASHTO classification is A-6, A-7, or A-8 in any layer at a depth of 20 inches or less.

Poor traction (loose sandy material).—The USDA texture includes sands or loamy sands in any layer at a depth of 10 inches or less.

#### **Forest Haul Road Considerations**

Haul roads serve as transportation routes from log landings to primary roads. Generally, haul roads are unpaved, but some are graveled.

Considerations shown in table 14 are as follows: *Slope*.—The slope is 8 percent or more.

Flooding.—The map unit component is frequently flooded.

Wetness.—The map unit component is somewhat poorly drained, poorly drained, or very poorly drained

or has a perched zone in which the soil moisture status is wet (any drainage class).

Depth to hard rock.—The depth to hard bedrock is less than 20 inches.

*Depth to soft rock.*—The depth to soft bedrock is less than 20 inches.

Surface boulders.— The word "bouldery" is included in the description of the surface layer, or 0.01 percent or more of the surface is covered with boulders.

*Areas of rock outcrop.*—The words "Rock outcrop" are in the map unit name.

Low bearing strength.—The AASHTO classification is A-6, A-7, or A-8 in any layer at a depth of 20 inches or less.

Rubbly surface.—The word "rubbly" is in the map unit name.

# **Forest Log Landing Considerations**

Log landings are areas where logs are assembled for transportation. Areas that require little or no cutting, filling, or surface preparation are desired.

Considerations shown in table 15 are as follows:

Slope.—The slope is more than 6 percent.

Flooding.—The map unit component is occasionally flooded or frequently flooded.

Wetness.—The map unit component is somewhat poorly drained, poorly drained, or very poorly drained or has a perched zone in which the soil moisture status is wet (any drainage class).

Surface boulders.— The word "bouldery" is included in the description of the surface layer, or 0.01 percent or more of the surface is covered with boulders.

Areas of rock outcrop.—The words "Rock outcrop" are in the map unit name.

Susceptible to rutting and wheel slippage (low strength).—The AASHTO classification is A-6, A-7, or A-8 in any layer at a depth of 20 inches or less.

Rubbly surface.—The word "rubbly" is in the map unit name.

# Forest Land Site Preparation and Planting Considerations

Considerations shown in table 16 are as follows: *Slope*.—The upper slope limit is more than 15 percent.

Flooding.—The map unit component is frequently flooded.

Wetness.—The map unit component is somewhat poorly drained, poorly drained, or very poorly drained or has a perched zone in which the soil moisture status is wet (any drainage class).

Depth to hard rock.—The depth to hard bedrock is less than 20 inches.

Surface stones.— The word "stony" is included in the description of the surface layer, or 0.01 percent or more of the surface is covered with stones.

Surface boulders.— The word "bouldery" is included in the description of the surface layer, or 0.01 percent or more of the surface is covered with boulders.

*Areas of rock outcrop.*—The words "Rock outcrop" are in the map unit name.

Water erosion.—The slope is 8 percent or more. Potential poor tilth and compaction.—The AASHTO classification is A-6 or A-7 in the upper 10 inches.

Rubbly surface.—The word "rubbly" is in the map unit name.

Cobbly surface.— The word "cobbly" is included in the description of the surface layer, or 0.1 percent or more of the surface is covered with cobbles.

# Recreation

Roseau County offers a variety of recreational opportunities throughout the year. The county has a large amount of public land, including portions of two State forests, several wildlife management areas, and one State park. Roseau County is bordered by Lake of the Woods on the northeast and has several impoundments and rivers scattered throughout the area (fig. 19).

The soils of the survey area are rated in table 17 according to limitations that affect their suitability for recreation. The ratings are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewer lines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation also are important. Soils that are subject to flooding are limited for recreational uses by the duration and intensity of flooding and the season when flooding occurs. In planning recreational facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

In table 17, the degree of soil limitation is expressed as slight, moderate, or severe. *Slight* means that soil properties are generally favorable and that limitations are minor and easily overcome. *Moderate* means that limitations can be overcome or alleviated by planning, design, or special maintenance. *Severe* means that

soil properties are unfavorable and that limitations can be offset only by costly soil reclamation, special design, intensive maintenance, limited use, or a combination of these.

The information in table 17 can be supplemented by other information in this survey, for example, interpretations for septic tank absorption fields in table 20 and interpretations for dwellings without basements and for local roads and streets in table 19.

Camp areas require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The best soils have mild slopes and are not wet or subject to flooding during the period of use. The surface has few or no stones or boulders, absorbs rainfall readily but remains firm, and is not dusty when dry. Strong slopes and stones or boulders can greatly increase the cost of constructing campsites.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The best soils for picnic areas are firm when wet, are not dusty when dry, are not subject to flooding during the period of use, and do not have slopes or stones or boulders that increase the cost of shaping sites or of building access roads and parking areas.

Playgrounds require soils that can withstand intensive foot traffic. The best soils are almost level and are not wet or subject to flooding during the season of use. The surface is free of stones and boulders, is firm after rains, and is not dusty when dry. If grading is needed, the depth of the soil over bedrock or a hardpan should be considered.

Paths and trails for hiking and horseback riding should require little or no cutting and filling. The best soils are not wet, are firm after rains, are not dusty when dry, and are not subject to flooding more than once a year during the period of use. They have moderate slopes and few or no stones or boulders on the surface.

Golf fairways are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. The best soils for use as golf fairways are firm when wet, are not dusty when dry, and are not subject to prolonged flooding during the period of use. They have moderate slopes and no stones or boulders on the surface. The suitability of the soil for tees or greens is not considered in rating the soils.



Figure 19.—An area of Hiwood fine sand, 1 to 6 percent slopes, along the shore of Hayes Lake. This lake was created for the purpose of increasing the water-related recreation available in the county. It was completed in 1973 and is a popular site for fishing, boating, and camping.

# Wildlife Habitat

Stanley T. Wood, area wildlife manager, Roseau River Wildlife Area, Minnesota Department of Natural Resources, assisted in the preparation of this section.

Soils affect the kind and amount of vegetation that is available to wildlife as food and cover. If food, cover, or water is missing, inadequate, or inaccessible, wildlife will be scarce or will not inhabit the area.

Manipulation of the type of cover usually causes changes in wildlife species composition and in population levels. Although several elements affect the presence and number of animals, land use is one of the more important factors. The two main land uses in Roseau County are agriculture and forestry.

The potential of the soils for habitat development varies throughout the survey area. Wildlife habitat can be created or improved by planting appropriate

vegetation, properly managing the existing plant cover, and fostering the natural establishment of desirable plants.

# Kinds of Wildlife Habitat

Five major land types occur in Roseau County:

1) agricultural areas with adjacent woodland and brushland; 2) bog areas; 3) pine forest; 4) beach ridges and the lower, adjacent interbeach areas; and 5) deciduous forests. Each of these areas is associated with a distinct group of soils. Interspersions of these land types occur in many areas of the county. Wetlands, which are extremely important to numerous species of waterfowl and wildlife, occur throughout the county. They range in size and type from small depressions in crop fields to thick peat deposits covering several thousand acres.

The agricultural areas and the adjacent woodland and brushland are distributed throughout the county. These areas make up approximately 60 percent of the land area. Soils in these areas are typically fertile and highly productive and are capable of supporting a wide variety of game and nongame species. Prior to the permanent settlement of the survey area, most of the soils in these areas supported tall grass prairie vegetation and developed thick layers of rich topsoil. Many prairie species no longer grow in the area. Areas that are cropped may provide high-quality food and forage during the spring, summer, and early fall. The wildlife cover that remains consists of scattered woodlots, aspen islands, and narrow ribbons of woodland and brush along rivers, creeks, and ponds.

Bogs occur throughout the county. These areas are characterized by wet, organic soils interspersed with higher lying islands of mineral soils. Soils in these areas have developed under saturated conditions (fig. 20). The most notable bogs occur in the northern part of the county, in the Roseau River Wildlife Management Area and Lost River State Forest. Organic soils in the bogs support a variety of vegetative cover ranging from spruce and tamarack timber to grasses and sedges. These areas provide a unique blend of forage and cover that attracts a wide variety of wildlife, including some very rare animals, such as the great grey owl. A small percentage of the organic deposits has been developed for agriculture.

A third habitat type, similar in size to the bog areas, is characterized by forest vegetation on sandy beach deposits. These beach deposits lie primarily within the Beltrami Island State Forest in the southeastern part of the county. The sandy soils in this area are typically droughty and infertile. They are generally unsuited to agriculture but do support a coniferous forest that is interspersed with deciduous growth. Forestry is the primary land use in this area.

A fourth, smaller habitat type consists of narrow beach ridges and the adjacent, lower lying interbeach areas. A good example of this habitat type is the Campbell Beach Ridge in the central part of the county. In areas of this habitat type, the high ridges generally have sandy or gravelly soils that support hardwood stands. These ridges typically drop off rapidly to lower lying, very poorly drained organic soils. The diversity caused by the rapidly changing terrain provides for a variety of food and cover. Some areas along the beach ridges have been cleared and planted to small grain and hay.

The fifth and smallest habitat type is the deciduous forest in eastern Roseau County. This area is transitional, grading from the tall grass prairie region of

the west to the forest of the east. The soils, which are generally wet due to a high water table and which have developed only a thin layer of topsoil, reflect this transitional status. Although most of the area is covered by deciduous forest interspersed with fir and spruce, portions have been cleared and planted to small grain and hay.

#### **Elements of Wildlife Habitat**

The potential of the soils in the survey area for use as wildlife habitat is rated in table 18. The elements of wildlife habitat are described in the following paragraphs.

Grain and seed crops are domestic grains and seed-producing herbaceous plants used by wildlife. Examples are corn, soybeans, wheat, oats, and barley.

Grasses and legumes are domestic perennial grasses and herbaceous legumes planted for wildlife food and cover. Examples are bromegrass, timothy, orchardgrass, clover, alfalfa, wheatgrass, and birdsfoot trefoil.

Wild herbaceous plants are native or naturally established grasses and forbs, including weeds, that provide food and cover for wildlife. Examples are bluestems, indiangrass, blueberry, goldenrod, lambsquarters, dandelions, blackberry, ragweed, wheatgrass, and nightshade.

The major soil properties affecting the growth of grain and forage crops and wild herbaceous plants are depth of the root zone, texture of the surface layer, the amount of water available to plants, wetness, salinity, and flooding. The length of the growing season also is important.

Hardwood trees and woody understory produce nuts or other fruit, buds, catkins, twigs, bark, and foliage that wildlife eat. Examples are oak, poplar, box elder, birch, maple, green ash, willow, and American elm. Examples of fruit-producing shrubs that are suitable for planting on soils that have good potential for these plants are hawthorn, honeysuckle, American plum, redosier dogwood, chokecherry, highbush cranberry, elderberry, gooseberry, serviceberry, silver buffaloberry, and crabapple.

Coniferous plants are cone-bearing trees, shrubs, or ground cover that provide habitat or supply food in the form of browse, seed, or fruit-like cones. Examples are pine, spruce, cedar, and tamarack.

*Shrubs* are bushy woody plants that produce fruit, buds, twigs, bark, and foliage. Examples of shrubs are mountainmahogany, bitterbrush, snowberry, and big sagebrush.



Figure 20.—A typical area of Cathro muck, ponded, MAP 22-30, 0 to 1 percent slopes, along the shores of Lake of the Woods. Extended periods of soil saturation limit plant growth to cattails and other hydrophytic species. Haug soils, which support woody vegetation, are in the slightly higher areas on the left.

The major soil properties affecting the growth of hardwood and coniferous trees and shrubs are depth of the root zone, the amount of water available to plants, and wetness.

Wetland plants are annual and perennial wild herbaceous plants that grow on moist or wet sites. Submerged or floating aquatic plants are excluded. Wetland plants produce food or cover for wetland wildlife. Examples of these plants are smartweeds, wild millet, rushes, sedges, bulrushes, wild rice, arrowhead, waterplantain, cattail, prairie cordgrass, bluejoint grass, asters, and beggarticks.

The major soil properties affecting wetland plants are texture of the surface layer, wetness, acidity or alkalinity, and slope.

Shallow water areas have an average depth of less than 5 feet. They are useful as habitat for some wildlife species. They are naturally wet areas or are created by dams, levees, or water-control measures in marshes or streams (fig. 21). Examples are waterfowl feeding areas, wildlife watering developments, beaver ponds, and other wildlife ponds.

The major soil properties affecting shallow water areas are depth to bedrock, wetness, surface stoniness, slope, and permeability.

The habitat for various kinds of wildlife is described in the following paragraphs.

Habitat for openland wildlife consists of cropland, pasture, meadows, and areas that are overgrown with grasses, herbs, shrubs, and vines. These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants. Wildlife attracted to these areas include bobwhite quail, pheasant, meadowlark, field sparrow, cottontail, and red fox.

Habitat for woodland wildlife consists of areas of deciduous and/or coniferous plants and associated grasses, legumes, and wild herbaceous plants. Wildlife attracted to these areas include wild turkey, ruffed



Figure 21.—An impoundment in an area of Percy loam, 0 to 2 percent slopes, very cobbly, at the Nereson Wildlife Management Area. Shallow water areas have been created by dredging and diking for wildlife habitat and recreational uses.

grouse, woodcock, thrushes, woodpeckers, squirrels, gray fox, raccoon, deer, and bear.

Habitat for wetland wildlife consists of open, marshy or swampy shallow water areas. Some of the wildlife attracted to such areas are ducks, geese, herons, shore birds, muskrat, mink, and beaver.

# **Engineering**

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. Ratings are given for building site development, sanitary facilities, construction materials, and water management. The ratings are based on observed performance of the soils and on the estimated data and test data in the "Soil Properties" section.

Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil within a depth of 5 or 6 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that

restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations should be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about grain-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 or 6 feet of the surface, soil wetness, depth to a seasonal zone in which the soil moisture status is wet, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kinds of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions: evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, earthfill, and topsoil; plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

# **Building Site Development**

Table 19 shows the degree and kind of soil limitations that affect shallow excavations, dwellings with and without basements, small commercial buildings, local roads and streets, and lawns and landscaping. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are

minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required. Special feasibility studies may be required where the soil limitations are severe.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for graves, utility lines, open ditches, or other purposes. The ratings are based on the soil properties that influence the ease of digging and the resistance to sloughing. Depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, the amount of large stones, and dense layers influence the ease of digging, filling, and compacting. Depth to a zone in which the soil moisture status is wet, flooding, and ponding may restrict the period when excavations can be made. Slope influences the ease of using machinery. Soil texture, depth to a zone in which the soil moisture status is wet, and linear extensibility (shrink-swell potential) influence the resistance to sloughing.

Dwellings are single-family houses of three stories or less. For dwellings without basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet. The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a zone in which the soil moisture status is wet, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification. The properties that affect the ease and amount of excavation include depth to a zone in which the soil moisture status is wet, ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Small commercial buildings are structures that are less than three stories high and do not have basements. The foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. The

ratings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a zone in which the soil moisture status is wet, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility (which is inferred from the Unified classification). The properties that affect the ease and amount of excavation include flooding, depth to a zone in which the soil moisture status is wet, ponding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or soil material stabilized by lime or cement; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, depth to a zone in which the soil moisture status is wet, ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrink-swell potential), the potential for frost action, depth to a zone in which the soil moisture status is wet, and ponding.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a zone in which the soil moisture status is wet; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a zone in which the soil moisture status is wet, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer.

# **Sanitary Facilities**

Table 20 shows the degree and kind of soil limitations that affect septic tank absorption fields, sewage lagoons, and sanitary landfills. The limitations

are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required.

The table also shows the suitability of the soils for use as daily cover for landfill. A rating of *good* indicates that soil properties and site features are favorable for the use and good performance and low maintenance can be expected; *fair* indicates that soil properties and site features are moderately favorable for the use and one or more soil properties or site features make the soil less desirable than the soils rated good; and *poor* indicates that one or more soil properties or site features are unfavorable for the use and overcoming the unfavorable properties requires special design, extra maintenance, or costly alteration.

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 60 inches is evaluated. The ratings are based on the soil properties that affect absorption of the effluent, construction and maintenance of the system, and public health. Permeability, depth to a zone in which the soil moisture status is wet, ponding, depth to bedrock or a cemented pan, and flooding affect absorption of the effluent. Stones and boulders, ice, and bedrock or a cemented pan interfere with installation. Subsidence interferes with installation and maintenance. Excessive slope may cause lateral seepage and surfacing of the effluent in downslope areas.

Some soils are underlain by loose sand and gravel or fractured bedrock at a depth of less than 4 feet below the distribution lines. In these soils the absorption field may not adequately filter the effluent, particularly when the system is new. As a result, the ground water may become contaminated.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water. Considered in the ratings are slope, permeability, depth to a zone in which the soil moisture status is

wet, ponding, depth to bedrock or a cemented pan, flooding, large stones, and content of organic matter.

Soil permeability is a critical property affecting the suitability for sewage lagoons. Most porous soils eventually become sealed when they are used as sites for sewage lagoons. Until sealing occurs, however, the hazard of pollution is severe. Soils that have a permeability rate of more than 2 inches per hour are too porous for the proper functioning of sewage lagoons. In these soils, seepage of the effluent can result in contamination of the ground water. Groundwater contamination is also a hazard if fractured bedrock is within a depth of 40 inches, if a zone in which the soil moisture status is wet is high enough to raise the level of sewage in the lagoon, or if floodwater overtops the lagoon.

A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope, bedrock, and cemented pans can cause construction problems, and large stones can hinder compaction of the lagoon floor. If the lagoon is to be uniformly deep throughout, the slope must be gentle enough and the soil material must be thick enough over bedrock or a cemented pan to make land smoothing practical.

A trench sanitary landfill is an area where solid waste is placed in successive layers in an excavated trench. The waste is spread, compacted, and covered daily with a thin layer of soil excavated at the site. When the trench is full, a final cover of soil material at least 2 feet thick is placed over the landfill. The ratings in the table are based on the soil properties that affect the risk of pollution, the ease of excavation, trafficability, and revegetation. These properties include permeability, depth to bedrock or a cemented pan, depth to a zone in which the soil moisture status is wet, ponding, slope, flooding, texture, stones and boulders, highly organic layers, soil reaction, and content of salts and sodium. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, onsite investigation may be needed.

Hard, nonrippable bedrock, creviced bedrock, or highly permeable strata in or directly below the proposed trench bottom can affect the ease of excavation and the hazard of ground-water pollution. Slope affects construction of the trenches and the movement of surface water around the landfill. It also affects the construction and performance of roads in areas of the landfill.

Soil texture and consistence affect the ease with which the trench is dug and the ease with which the soil can be used as daily or final cover. They determine the workability of the soil when dry and when wet. Soils that are plastic and sticky when wet are difficult to excavate, grade, or compact and are difficult to place as a uniformly thick cover over a layer of refuse.

The soil material used as the final cover for a trench landfill should be suitable for plants. It should not have excess sodium or salts and should not be too acid. The surface layer generally has the best workability, the highest content of organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

In an area sanitary landfill, solid waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site. A final cover of soil material at least 2 feet thick is placed over the completed landfill. The ratings in the table are based on the soil properties that affect trafficability and the risk of pollution. These properties include flooding, permeability, depth to a zone in the which soil moisture status is wet, ponding, slope, and depth to bedrock or a cemented pan.

Flooding is a serious problem because it can result in pollution in areas downstream from the landfill. If permeability is too rapid or if fractured bedrock, a fractured cemented pan, or a zone in which the soil moisture status is wet is close to the surface, the leachate can contaminate the water supply. Slope is a consideration because of the extra grading required to maintain roads in the steeper areas of the landfill. Also, leachate may flow along the surface of the soils in the steeper areas and cause difficult seepage problems.

Daily cover for landfill is the soil material that is used to cover compacted solid waste in an area sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste. The ratings in the table also apply to the final cover for a landfill. They are based on the soil properties that affect workability, the ease of digging, and the ease of moving and spreading the material over the refuse daily during wet and dry periods. These properties include soil texture, depth to a zone in which the soil moisture status is wet, ponding, rock fragments, slope, depth to bedrock or a cemented pan, reaction, and content of salts, sodium, or lime.

Loamy or silty soils that are free of large stones and excess gravel are the best cover for a landfill. Clayey soils may be sticky and difficult to spread; sandy soils are subject to wind erosion.

Slope affects the ease of excavation and of moving the cover material. Also, it can influence runoff, erosion, and reclamation of the borrow area. After soil material has been removed, the soil material remaining in the borrow area must be thick enough over bedrock, a cemented pan, or a zone in which the soil moisture status is wet to permit revegetation. The soil material used as the final cover for a landfill should be suitable for plants. It should not have excess sodium, salts, or lime and should not be too acid.

#### **Construction Materials**

Table 21 gives information about the soils as a source of roadfill, sand, gravel, and topsoil. The soils are rated *good, fair,* or *poor* as a source of roadfill and topsoil. They are rated as a *probable* or *improbable* source of sand and gravel. The ratings are based on soil properties and site features that affect the removal of the soil and its use as construction material. Normal compaction, minor processing, and other standard construction practices are assumed. Each soil is evaluated to a depth of 5 or 6 feet.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the soil material below the surface layer to a depth of 5 or 6 feet. It is assumed that soil layers will be mixed during excavating and spreading. Many soils have layers of contrasting suitability within their profile. The table showing engineering index properties provides detailed information about each soil layer. This information can help to determine the suitability of each layer for use as roadfill. The performance of soil after it is stabilized with lime or cement is not considered in the ratings.

The ratings are based on soil properties, site features, and observed performance of the soils. The thickness of suitable material is a major consideration. The ease of excavation is affected by large stones, a zone high in the profile in which the moisture status is wet, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the engineering classification of the soil) and shrink-swell potential.

Soils rated *good* contain significant amounts of sand or gravel or both. They have at least 5 feet of suitable material, a low shrink-swell potential, few cobbles and stones, and slopes of 15 percent or less. Depth to a zone in which the soil moisture status is wet is more than 3 feet. Soils rated *fair* are more than 35 percent silt- and clay-sized particles and have a plasticity index of less than 10. They have a moderate

shrink-swell potential, slopes of 15 to 25 percent, or many stones. Depth to a zone in which the soil moisture status is wet is 1 to 3 feet. Soils rated *poor* have a plasticity index of more than 10, a high shrink-swell potential, many stones, or slopes of more than 25 percent. They have a zone in which the soil moisture status is wet at a depth of less than 1 foot. They may have layers of suitable material, but the material is less than 3 feet thick.

Sand and gravel are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction (fig. 22). Specifications for each use vary widely. In table 21, only the probability of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material.

The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the engineering classification of the soil), the thickness of suitable material, and the content of rock fragments. Kinds of rock, acidity, and stratification are given in the soil series descriptions. Gradation of grain sizes is given in the table on engineering index properties.

A soil rated as a probable source has a layer of clean sand or gravel or a layer of sand or gravel that is up to 12 percent silty fines. This material must be at least 3 feet thick and less than 50 percent, by weight, large stones. All other soils are rated as an improbable source. Coarse fragments of soft bedrock, such as shale and siltstone, are not considered to be sand and gravel.

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area.

Plant growth is affected by toxic material and by such properties as soil reaction, available water capacity, and fertility. The ease of excavating, loading, and spreading is affected by rock fragments, slope, a zone in which the soil moisture status is wet, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, a zone in which the soil moisture status is wet, rock fragments, bedrock, and toxic material.

Soils rated *good* have friable, loamy material to a depth of at least 40 inches. They are free of stones and cobbles, have little or no gravel, and have slopes of less than 8 percent. They are low in content of soluble salts, are naturally fertile or respond well to fertilizer, and are not so wet that excavation is difficult.

Soils rated *fair* are sandy soils, loamy soils that have a relatively high content of clay, soils that have only 20 to 40 inches of suitable material, soils that have an appreciable amount of gravel, stones, or soluble salts, or soils that have slopes of 8 to 15 percent. The soils are not so wet that excavation is difficult.

Soils rated *poor* are very sandy or clayey, have less than 20 inches of suitable material, have a large amount of gravel, stones, or soluble salts, have slopes of more than 15 percent, or have a seasonal zone, at or near the surface, in which the soil moisture status is wet.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

# Water Management

Table 22 gives information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; and aguifer-fed excavated ponds. The limitations are considered slight if soil properties and site features are generally favorable for the indicated use and limitations are minor and are easily overcome; moderate if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and severe if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increase in construction costs, and possibly increased maintenance are required.

This table also gives for each soil the restrictive features that affect drainage, irrigation, terraces and diversions, and grassed waterways.

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a



Figure 22.—An area of Clearriver loamy fine sand, 0 to 3 percent slopes, which has been excavated for sand and gravel. Clearriver soils formed in sandy and gravelly beach deposits.

depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A zone high in the profile in which the soil moisture status is wet can affect the amount of usable material. It can also affect trafficability.

Aquifer-fed excavated ponds are pits or dugouts that extend to a ground-water aquifer or to a depth

below a permanent saturated zone. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent zone in which the soil moisture status is wet, permeability of the aquifer, and quality of the water as inferred from the salinity of the soil. Depth to bedrock and the content of large stones affect the ease of excavation.

Drainage is the removal of excess surface and subsurface water from the soil. How easily and effectively the soil is drained depends on the depth to bedrock, to a cemented pan, or to other layers that affect the rate of water movement; permeability; depth to a zone high in the profile in which the soil moisture status is wet or depth of standing water if the soil is subject to ponding; slope; susceptibility to flooding; subsidence of organic layers; and the potential for frost action. Excavating and grading and the stability of

ditchbanks are affected by depth to bedrock or to a cemented pan, large stones, slope, and the hazard of cutbanks caving. The productivity of the soil after drainage is adversely affected by extreme acidity or by toxic substances in the root zone, such as salts, sodium, and sulfur. Availability of drainage outlets is not considered in the ratings.

Irrigation is the controlled application of water to supplement rainfall and support plant growth. The design and management of an irrigation system are affected by depth to a zone in which the soil moisture status is wet, the need for drainage, flooding, available water capacity, intake rate, permeability, erosion hazard, and slope. The construction of a system is affected by large stones and depth to bedrock or to a cemented pan. The performance of a system is affected by the depth of the root zone, the amount of salts or sodium, and soil reaction.

Terraces and diversions are embankments or a

combination of channels and ridges constructed across a slope to control erosion and conserve moisture by intercepting runoff. Slope, wetness, large stones, and depth to bedrock or to a cemented pan affect the construction of terraces and diversions. A restricted rooting depth, a severe hazard of wind erosion or water erosion, an excessively coarse texture, and restricted permeability adversely affect maintenance.

Grassed waterways are natural or constructed channels, generally broad and shallow, that conduct surface water to outlets at a nonerosive velocity. Large stones, wetness, slope, and depth to bedrock or to a cemented pan affect the construction of grassed waterways. A hazard of wind erosion, low available water capacity, restricted rooting depth, toxic substances such as salts and sodium, and restricted permeability adversely affect the growth and maintenance of the grass after construction.

Table 6.--Cropland Management Considerations

(See text for a description of the considerations listed in this table.)

Map symbol	Percent of	
and .	map unit	considerations
component name		
47:	 	
Colvin		Lime content Ponding
	, I	Potential poor tilth and compaction
	, I	Potential for ground-water contamination
		Potential for surface-water contamination
	i i	Wet soil moisture status
	İ	Wind erosion
Bearden	   5	Lime content
bearden	, 3   	Potential for ground-water contamination
		Wet soil moisture status
	İ	Wind erosion
	[ [	
Grano	5	Ponding
	, I	Potential poor tilth and compaction Potential for ground-water contamination
	, I	Potential for surface-water contamination
		Wet soil moisture status
_	_	
Sax	5	High content of organic matter
	, I	Ponding Potential for ground-water contamination
	, I	Potential for surface-water contamination
		Wet soil moisture status
	i i	Wind erosion
48B: Hiwood	   85	Acid soil
		Excessive permeability
	İ	Limited available water capacity
	ĺ	Limited content of organic matter
	i I	Potential for ground-water contamination
		Wet soil moisture status
	 	Wind erosion
Redby	   7	Excessive permeability
_	İ	Limited available water capacity
	[	Limited content of organic matter
		Potential for ground-water contamination
		Wet soil moisture status Wind erosion
	, I	wind erosion
Clearriver	3	Excessive permeability
	[	Limited available water capacity
		Limited content of organic matter
	 	Potential for ground-water contamination Wind erosion
	(	WING GLOSION
	į	
Cormant	3	Excessive permeability
Cormant	3	Excessive permeability Limited available water capacity
Cormant	3	Limited available water capacity Ponding
Cormant	3     3   	Limited available water capacity Ponding Potential for ground-water contamination
Cormant	3     3   	Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination
Cormant	3	Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Cormant	3	Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination
Cormant		Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
		Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion  Excessive permeability Limited available water capacity
		Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion  Excessive permeability Limited available water capacity Limited content of organic matter
		Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion  Excessive permeability Limited available water capacity

Table 6.--Cropland Management Considerations--Continued

Map symbol	Percent of	
and	map unit	considerations
component name		<u> </u>
52:		
Augsburg	85	Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status Wind erosion
Croke	5	Potential for ground-water contamination Wet soil moisture status Wind erosion
Grano	5	Ponding Potential for ground-water contamination Potential for surface-water contaminatio Wet soil moisture status
Sago	5	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
59:		
Grimstad	85	Excessive permeability Lime content Potential for ground-water contamination Wet soil moisture status Wind erosion
Strathcona	12	Excessive permeability Lime content Ponding Potential for ground-water contamination Potential for surface-water contaminatio Wet soil moisture status Wind erosion
Foxhome	3	Excessive permeability Potential for ground-water contamination Wet soil moisture status Wind erosion
64:		
Ulen	85	Excessive permeability Lime content Limited available water capacity Potential for ground-water contamination Wet soil moisture status Wind erosion
Rosewood		Excessive permeability Lime content Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contaminatio Wet soil moisture status Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol	Percent of	Cropland management
and	map unit	considerations
component name	İ	
64:	 	
Redby	3	Excessive permeability
		Limited available water capacity
		Limited content of organic matter
		Potential for ground-water contamination
		Wet soil moisture status
	i i	Wind erosion
Rushlake	   2	Excessive permeability
RUSIII ake	<b>4</b>	
		Limited available water capacity
		Potential for ground-water contamination
		Wind erosion
65:		
Foxhome	85	Excessive permeability
	i i	Potential for ground-water contamination
		Wet soil moisture status
	 	Wind erosion
		wind elosion
Strandquist	12	Excessive permeability
		Lime content
		Ponding
		Potential for ground-water contamination
	ĺ	Potential for surface-water contamination
		Wet soil moisture status
	 	Wind erosion
	 	Willia elogion
Gl. a man		 
Skagen	3	Lime content
		Potential for ground-water contamination
		Potential for surface-water contamination
		Wet soil moisture status
		Wind erosion
	İ	
67:	i	
Bearden	85	Lime content
		Potential for ground-water contamination
	l I	Wet soil moisture status
		Wind erosion
Colvin	15	Lime content
		Ponding
		Potential poor tilth and compaction
	j	Potential for ground-water contamination
		Potential for surface-water contamination
	 	Wet soil moisture status
		Wind erosion
77:		
Garnes	85	Limited content of organic matter
		Potential for ground-water contamination
	İ	Wet soil moisture status
		Wind erosion
	i	
Chilgren	   10	Ponding
CHITATEH		
		Potential for ground-water contamination
		Potential for surface-water contamination
		Wet soil moisture status
	į į	Wind erosion
	į	
Eckvoll	3	Excessive permeability
		Potential for ground-water contamination
		Wet soil moisture status
		Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol	Percent of	
and	map unit	considerations
component name		
77: Pelan	   2   	Excessive permeability Potential for ground-water contamination Wet soil moisture status Wind erosion
111:		
Hangaard	90	Excessive permeability Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Deerwood	5   	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Rushlake	3	Excessive permeability Limited available water capacity Potential for ground-water contamination Wind erosion
Rosewood	2	Excessive permeability Lime content Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
116: Redby	85     	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion
Cormant	8	Excessive permeability Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Hiwood		Acid soil Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol	Percent of	-
and	map unit	considerations
component name		
116:		
Leafriver	1	Excessive permeability
	_	High content of organic matter
	j i	Ponding
		Potential for ground-water contamination
		Potential for surface-water contamination
		Wet soil moisture status Wind erosion
	 	Wind erosion
117:		
Cormant	85	Excessive permeability
	į į	Limited available water capacity
		Ponding
		Potential for ground-water contamination
	 	Potential for surface-water contamination Wet soil moisture status
	 	Wind erosion
		02052011
Leafriver	7	Excessive permeability
		High content of organic matter
		Ponding
	 	Potential for ground-water contamination  Potential for surface-water contamination
	 	Wet soil moisture status
		Wind erosion
	j i	
Epoufette	3	Excessive permeability
		Limited available water capacity
	 	Ponding Potential for ground-water contamination
	 	Potential for surface-water contamination
		Wet soil moisture status
	j i	Wind erosion
Redby	3	Excessive permeability Limited available water capacity
	 	Limited available water capacity  Limited content of organic matter
		Potential for ground-water contamination
	j i	Wet soil moisture status
		Wind erosion
Government of the state of the		T
Grygla, depressional	2	Excessive permeability Ponding
		Potential for ground-water contamination
		Potential for surface-water contamination
	j i	Wet soil moisture status
		Wind erosion
133:		
133: Dalbo	   85	Potential for ground-water contamination
	55	Wet soil moisture status
	j	
Mustinka	10	Ponding
		Potential poor tilth and compaction
		Potential for ground-water contamination
	 	Potential for surface-water contamination Wet soil moisture status
		BOIL MOIDUIG BURGUS
Moranville	5	Excessive permeability
	l i	Limited content of organic matter
		Potential for ground-water contamination
		Wet soil moisture status
	 	Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol	Percent of	
and	map unit	considerations
component name		
145:		
Enstrom	85     	Excessive permeability Potential for ground-water contamination Wet soil moisture status Wind erosion
Grygla	10   	Excessive permeability Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Redby	4	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion
Pelan	1	Excessive permeability Potential for ground-water contamination Wet soil moisture status Wind erosion
147:	i	
Spooner	85   	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Baudette	5       	Potential for ground-water contamination Potential for surface-water contamination Water erosion Wet soil moisture status Wind erosion
Grygla	5	Excessive permeability Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Sago	5   	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
158B: Zimmerman		Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol	Percent of	Cropland management
and	map unit	considerations
component name		
158B:		
Hiwood	6	Acid soil
		Excessive permeability
		Limited available water capacity
		Limited content of organic matter  Potential for ground-water contamination
		Wet soil moisture status
		Wind erosion
		3232311
Two Inlets	6	Excessive permeability
	ĺ	Limited available water capacity
		Limited content of organic matter
		Potential for ground-water contamination
		Wind erosion
D - Al-		The second secon
Redby	3	Excessive permeability
		Limited available water capacity Limited content of organic matter
		Potential for ground-water contamination
		Wet soil moisture status
	i	Wind erosion
	İ	
167B:		
Baudette	85	Potential for ground-water contamination
		Potential for surface-water contamination Water erosion
		Wet soil moisture status
		Wind erosion
	i	
Spooner	10	Ponding
		Potential for ground-water contamination
		Potential for surface-water contamination
		Wet soil moisture status
		Wind erosion
Moranville	5	Excessive permeability
	ĺ	Limited content of organic matter
		Potential for ground-water contamination
		Wet soil moisture status
		Wind erosion
187:		
Haug	90	High content of organic matter
-	i	Ponding
	ĺ	Potential for ground-water contamination
		Potential for surface-water contamination
		Wet soil moisture status
		Wind erosion
Percy	   5	Ponding
		Potential for ground-water contamination
		Potential for surface-water contamination
	i	Wet soil moisture status
_		
Cathro		High content of organic matter
		Ponding
		Potential for ground-water contamination  Potential for surface-water contamination
		Wet soil moisture status
		Wind erosion
	i	
	'	

Table 6.--Cropland Management Considerations--Continued

Map symbol	Percent of	
and	map unit	considerations
component name		
187:		- 11
Boash	2	Ponding
	 	Potential poor tilth and compaction  Potential for ground-water contamination
		Potential for surface-water contamination
		Wet soil moisture status
191:	j	
Epoufette	85	Excessive permeability
		Limited available water capacity
		Ponding
		Potential for ground-water contamination
		Potential for surface-water contamination
		Wet soil moisture status Wind erosion
	 	WING CLOSION
Cormant	   5	Excessive permeability
		Limited available water capacity
	j	Ponding
		Potential for ground-water contamination
		Potential for surface-water contamination
		Wet soil moisture status
		Wind erosion
Leafriver	   5	Excessive permeability
Healilvel	] 3	High content of organic matter
		Ponding
		Potential for ground-water contamination
	i i	Potential for surface-water contamination
		Wet soil moisture status
		Wind erosion
	_	
Meehan	5	Excessive permeability
	 	Limited available water capacity  Potential for ground-water contamination
		Wet soil moisture status
		Wind erosion
	i i	
202:		
Meehan	85	Excessive permeability
		Limited available water capacity
		Potential for ground-water contamination Wet soil moisture status
	 	Wind erosion
		Willa Clopion
Cormant	8	Excessive permeability
	i i	Limited available water capacity
		Ponding
		Potential for ground-water contamination
		Potential for surface-water contamination
		Wet soil moisture status
	] 	Wind erosion
Wurtsmith	l 5	Excessive permeability
obiii. oii		Limited available water capacity
		Limited content of organic matter
	j	Potential for ground-water contamination
	l i	Wet soil moisture status
		Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol	Percent of	Cropland management
and	map unit	considerations
component name		
	[	
202:		
Leafriver	2	Excessive permeability
		High content of organic matter  Ponding
		Potential for ground-water contamination
		Potential for surface-water contamination
		Wet soil moisture status
		Wind erosion
205:	i i	
Karlstad	85	Excessive permeability
		Limited available water capacity
		Potential for ground-water contamination
		Wind erosion
Sahkahtay	7	Excessive permeability
		Limited available water capacity
		Ponding
		Potential for ground-water contamination
		Potential for surface-water contamination
		Wet soil moisture status Wind erosion
	 	wind erosion
Marquette	5	Excessive permeability
Marquecce		Limited available water capacity
		Potential for ground-water contamination
		Potential for surface-water contamination
		Wind erosion
	j i	
Redby	2	Excessive permeability
	į į	Limited available water capacity
		Limited content of organic matter
		Potential for ground-water contamination
		Wet soil moisture status
		Wind erosion
21.		Water state 3
Pits, gravel	1	Not rated
242B:		
Marquette	85	Excessive permeability
Marqueece	05	Limited available water capacity
		Potential for ground-water contamination
		Potential for surface-water contamination
	j i	Wind erosion
	į i	
Karlstad	14	Excessive permeability
		Limited available water capacity
		Potential for ground-water contamination
		Wind erosion
Pits, gravel	1	Not rated
000		
280:		Eugagairra nama-1-11-1
Pelan	85	Excessive permeability
		Potential for ground-water contamination
		Wet soil moisture status Wind erosion
		wing elopion
Strandquist	10	Excessive permeability
2010104010	10	Lime content
		Ponding
		Potential for ground-water contamination
		Potential for surface-water contamination
	1	Wet soil moisture status
		Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol	Percent of	-
and	map unit	considerations
component name		
280:		
Garnes	3	Limited content of organic matter
		Potential for ground-water contamination
		Wet soil moisture status
		Wind erosion
Manage Ada	1	   B
Marquette	1	Excessive permeability
	 	Limited available water capacity  Potential for ground-water contamination
	 	Potential for surface-water contamination
	İ	Wind erosion
Pits, gravel	1	Not rated
	İ	
379:	j i	
Percy, very cobbly	90	Ponding
	l i	Potential for ground-water contamination
		Potential for surface-water contamination
		Wet soil moisture status
Boash	3	Ponding
		Potential poor tilth and compaction
		Potential for ground-water contamination   Potential for surface-water contamination
	 	Wet soil moisture status
	 	Wet soil moisture status
Strandquist	3	Excessive permeability
•		Lime content
	j i	Ponding
	ĺ	Potential for ground-water contamination
		Potential for surface-water contamination
		Wet soil moisture status
		Wind erosion
_		
Haug	2	High content of organic matter
	 	Ponding
	 	Potential for ground-water contamination   Potential for surface-water contamination
	 	Wet soil moisture status
		Wind erosion
	į	
Skagen, very cobbly	2	Lime content
		Potential for ground-water contamination
		Potential for surface-water contamination
	<u> </u>	Wet soil moisture status
		Wind erosion
202		
383: Percy	   90	Ponding
rercy	30	Potential for ground-water contamination
		Potential for surface-water contamination
		Wet soil moisture status
Boash	3	Ponding
	l i	Potential poor tilth and compaction
	l i	Potential for ground-water contamination
		Potential for surface-water contamination
	<u> </u>	Wet soil moisture status

Table 6.--Cropland Management Considerations--Continued

Map symbol	Percent of	Cropland management
and	map unit	considerations
component name		
202.		 
383: Strandquist	3	Excessive permeability Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Haug	2	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Skagen	2	Lime content Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
384:		
Percy, depressional	85     	Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Haug	7	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Percy	5	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Boash	3	Ponding Potential poor tilth and compaction Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
387:		
Roliss, depressional	85     	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Haug	10	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol	Percent of	Cropland management
and	map unit	considerations
component name		<u> </u>
207		
387: Roliss	5	Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
404:		
Chilgren	85     	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Garnes	5	Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion
Grygla	5	Excessive permeability Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Haug	5	High content of organic matter  Ponding  Potential for ground-water contamination  Potential for surface-water contamination  Wet soil moisture status  Wind erosion
412:		
Mavie	85     	Excessive permeability Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Foxhome	5	Excessive permeability Potential for ground-water contamination Wet soil moisture status Wind erosion
Northwood	5	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Percy, very cobbly	5	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status

Table 6.--Cropland Management Considerations--Continued

Map symbol	Percent of	
and	map unit	considerations
component name		
432:	ļ	
Strandquist	85         	Excessive permeability Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
_	_	
Percy, very cobbly	5       	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Haug	4	High content of organic matter
	   	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Boash	3	Ponding Potential poor tilth and compaction Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Foxhome	3	Excessive permeability Potential for ground-water contamination Wet soil moisture status Wind erosion
433:		
Syrene, depressional	85       	Excessive permeability Lime content Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Deerwood	5	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Rosewood	 	Excessive permeability Lime content Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol	Percent of	-
and	map unit	considerations
component name		<u> </u>
433:		
Syrene	5   5 	Excessive permeability Lime content Limited available water capacity
		Ponding Potential for ground-water contamination
	     	Potential for surface-water contamination Wet soil moisture status Wind erosion
435:	 	
Syrene	   85 	Excessive permeability Lime content Limited available water capacity
	     	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Rosewood	   5 	Excessive permeability Lime content
		Limited available water capacity Ponding Potential for ground-water contamination
		Potential for surface-water contamination Wet soil moisture status Wind erosion
Syrene, depressional	5	Excessive permeability Lime content Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Karlsruhe	3	Excessive permeability Limited available water capacity Potential for ground-water contamination Wet soil moisture status Wind erosion
Deerwood	2	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
439: Strathcona	85	Excessive permeability Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol	Percent of	Cropland management
and	map unit	considerations
component name		
439:	i	
Northwood	5	Excessive permeability
		High content of organic matter
		Ponding
		Potential for ground-water contamination
		Potential for surface-water contamination Wet soil moisture status
		Wind erosion
		WING GLOSION
Percy	5	Ponding
_	İ	Potential for ground-water contamination
		Potential for surface-water contamination
		Wet soil moisture status
God make 3		The second secon
Grimstad	3	Excessive permeability Lime content
		Potential for ground-water contamination
		Wet soil moisture status
		Wind erosion
	İ	
Strandquist	2	Excessive permeability
		Lime content
		Ponding
		Potential for ground-water contamination Potential for surface-water contamination
		Wet soil moisture status
		Wind erosion
481:	İ	
Kratka	85	Excessive permeability
		Ponding
		Potential for ground-water contamination Potential for surface-water contamination
		Wet soil moisture status
		Wind erosion
	i	
Northwood	5	Excessive permeability
		High content of organic matter
		Ponding
		Potential for ground-water contamination Potential for surface-water contamination
		Wet soil moisture status
		Wind erosion
Percy	5	Ponding
		Potential for ground-water contamination
		Potential for surface-water contamination
		Wet soil moisture status
Enstrom	   3	Excessive permeability
HIS CI OM	3	Potential for ground-water contamination
		Wet soil moisture status
	i	Wind erosion
	İ	
Strandquist	2	Excessive permeability
		Lime content
		Ponding
		Potential for ground-water contamination Potential for surface-water contamination
		Wet soil moisture status
		Wind erosion
	i	

Table 6.--Cropland Management Considerations--Continued

Map symbol	Percent of	Cropland management
and component name	map unit	considerations
Component name	<u> </u>	
482:	i i	
Grygla	85	Excessive permeability
	 	Ponding Potential for ground-water contamination
	, , 	Potential for surface-water contamination
	j j	Wet soil moisture status
		Wind erosion
Chilgren	   5	Ponding
0		Potential for ground-water contamination
	į į	Potential for surface-water contamination
		Wet soil moisture status
	 	Wind erosion
Grygla, depressional	5	Excessive permeability
		Ponding
		Potential for ground-water contamination  Potential for surface-water contamination
	, I	Wet soil moisture status
	į į	Wind erosion
Enstrom	3	Excessive permeability Potential for ground-water contamination
	İ	Wet soil moisture status
	i i	Wind erosion
Northwood	   2	Excessive permeability
NOI CHWOOD	, <u>2</u> ,	High content of organic matter
	i i	Ponding
		Potential for ground-water contamination
	 	Potential for surface-water contamination Wet soil moisture status
		Wind erosion
	[ [	
532: Sago	   90	High content of organic matter
bago	, 50   	Ponding
	i i	Potential for ground-water contamination
		Potential for surface-water contamination
	 	Wet soil moisture status Wind erosion
	i i	
Cathro	5	High content of organic matter
		Ponding
	 	Potential for ground-water contamination Potential for surface-water contamination
	į į	Wet soil moisture status
		Wind erosion
Zippel	   5	Ponding
**	j ,	Potential for ground-water contamination
		Potential for surface-water contamination
		Wet soil moisture status Wind erosion
	]   	will GLOSTOH
534:		
Mooselake	90	High content of organic matter
		Ponding Potential for ground-water contamination
	, I   I	Potential for ground-water contamination  Potential for surface-water contamination
	į į	Wet soil moisture status
	l I	

Table 6.--Cropland Management Considerations--Continued

Map symbol	Percent of	Cropland management
and	map unit	considerations
component name		
534: Bullwinkle	   4	High content of organic matter
Bullwinkie	<del>1</del>	High content of organic matter Ponding
	 	Potential for ground-water contamination
	i	Potential for surface-water contamination
	i i	Wet soil moisture status
	j i	Wind erosion
Dora	3	High content of organic matter
		Ponding
		Potential for ground-water contamination Potential for surface-water contamination
	 	Restricted permeability
	 	Wet soil moisture status
	i i	Wind erosion
	j i	
Tawas	3	Excessive permeability
		High content of organic matter
		Ponding
		Potential for ground-water contamination Potential for surface-water contamination
	 	Wet soil moisture status
	 	Wind erosion
	i i	
540:	j i	
Seelyeville	90	High content of organic matter
		Ponding
		Potential for ground-water contamination
		Potential for surface-water contamination Wet soil moisture status
	 	Wind erosion
	i	Willia Clobion
Cathro	4	High content of organic matter
		Ponding
		Potential for ground-water contamination
		Potential for surface-water contamination
		Wet soil moisture status
	 	Wind erosion
Dora	3	High content of organic matter
	i i	Ponding
	j i	Potential for ground-water contamination
		Potential for surface-water contamination
		Restricted permeability
		Wet soil moisture status
	 	Wind erosion
Markey		Excessive permeability
-	į i	High content of organic matter
	į į	Ponding
	l i	Potential for ground-water contamination
		Potential for surface-water contamination
		Wet soil moisture status
		Wind erosion
541:		
o41: Rifle	   90	High content of organic matter
		3 3000 0- 0- 3 maccor
	30	Ponding
	30   	Ponding Potential for ground-water contamination
		_
		Potential for ground-water contamination

Table 6.--Cropland Management Considerations--Continued

Map symbol	Percent of	
and	map unit	considerations
component name		
541:		
Tacoosh	10	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
	i	
543:	į	
Markey	90	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Cormant	5     5	Excessive permeability Limited available water capacity Ponding
		Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Seelyeville	5	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
544:		
Cathro	90	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Percy, very cobbly	4     	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Grygla	3	Excessive permeability Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Seelyeville	3	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol	Percent of	Cropland management
and component name	map unit	considerations
Component name		
546: Lupton	90	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Bullwinkle	4	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Dora	3	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status Wind erosion
Tawas	3	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
547:		
Deerwood	90	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Markey	4	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Rosewood	3	Excessive permeability Lime content Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Syrene		Excessive permeability Lime content Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol	Percent of	
and	map unit	considerations
component name		
550:	ļ	
Dora	90      - 	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status Wind erosion
		wind erosion
Boash	4       	Ponding Potential poor tilth and compaction Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Seelyeville	3	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Woodslake	3	Ponding Potential poor tilth and compaction Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status
F.C.1 .		
561: Bullwinkle	90         	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Lupton	4   	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Northwood, wooded	4	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Chilgren	2	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion

Table 6.--Cropland Management Considerations--Continued

		Garal and an annual to
Map symbol and	Percent of   map unit	-
component name		Conditional
563:	İ	
Northwood	90   	Excessive permeability High content of organic matter Ponding
		Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Grygla	4	Excessive permeability Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Berner	3	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Strandquist	3	Excessive permeability Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
5.65		
565: Eckvoll	85   	Excessive permeability Potential for ground-water contamination Wet soil moisture status Wind erosion
Chilgren	5	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Grygla	5     	Excessive permeability Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Hiwood	5	Acid soil Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion
568: Zippel	85   	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol	Percent of	
and	map unit	considerations
component name		<u>'</u>
568:		
Augsburg, depressional	5	Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status Wind erosion
Sago	5	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Skime	5	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion
569:		
Wabanica	<b>85</b>	Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Warroad	6	Excessive permeability Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Sax	4	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Grano	3	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Enstrom	2	Excessive permeability Potential for ground-water contamination Wet soil moisture status Wind erosion
570: Faunce	85	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol	Percent of	
and	map unit	considerations
component name		
570:		
Clearriver	7	Excessive permeability
	i	Limited available water capacity
	i	Limited content of organic matter
	ĺ	Potential for ground-water contamination
		Wind erosion
Zimmerman	4	Excessive permeability
		Limited available water capacity
		Limited content of organic matter
		Potential for ground-water contamination Wind erosion
		WING GLOSION
Meehan	3	Excessive permeability
		Limited available water capacity
	i	Potential for ground-water contamination
	ĺ	Wet soil moisture status
		Wind erosion
Pits, gravel	1	Not rated
581:	90	Paradia -
Percy	90	Ponding Potential for ground-water contamination
		Potential for surface-water contamination
		Wet soil moisture status
		Wind erosion
	i	
Haug	5	High content of organic matter
		Ponding
		Potential for ground-water contamination
		Potential for surface-water contamination
		Wet soil moisture status Wind erosion
		wind erosion
Boash	3	Ponding
	j	Potential poor tilth and compaction
		Potential for ground-water contamination
		Potential for surface-water contamination
		Wet soil moisture status
		* Amount of the second of the
Skagen	2	Lime content Potential for ground-water contamination
		Potential for surface-water contamination
		Wet soil moisture status
	i	Wind erosion
	İ	
582:		
Roliss	85	Lime content
		Ponding
		Potential for ground-water contamination
		Potential for surface-water contamination Wet soil moisture status
		Wind erosion
		·
Roliss, depressional	7	Ponding
	ĺ	Potential for ground-water contamination
	ĺ	Potential for surface-water contamination
		Wet soil moisture status
	_	- "
Boash	5	Ponding
		Potential poor tilth and compaction  Potential for ground-water contamination
		Potential for surface-water contamination
		Wet soil moisture status
	i	

Table 6.--Cropland Management Considerations--Continued

Map symbol	Percent of	
and	map unit	considerations
component name		
582: Haug	3     3	High content of organic matter Ponding Potential for ground-water contamination
	 	Potential for surface-water contamination Wet soil moisture status Wind erosion
583:		
Nereson	85   	Potential for ground-water contamination Wet soil moisture status Wind erosion
Percy	10	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Pelan	3	Excessive permeability Potential for ground-water contamination Wet soil moisture status Wind erosion
Foxhome	2	Excessive permeability Potential for ground-water contamination Wet soil moisture status Wind erosion
627:	İ	
Tawas	90	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Leafriver	4	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Lupton	4	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Cormant	2	Excessive permeability Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion

Table 6.--Cropland Management Considerations--Continued

map unit	considerations  High content of organic matter Limited available water capacity Ponding
90	Limited available water capacity Ponding
90   	Limited available water capacity Ponding
90       	Limited available water capacity Ponding
	Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status Wind erosion
4   	Ponding Potential poor tilth and compaction Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
4         	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status Wind erosion
2         	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
j	
85       	Excessive permeability Lime content Potential for ground-water contamination Wet soil moisture status Wind erosion
12	Excessive permeability Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
3	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion
85       	Ponding Potential poor tilth and compaction Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
7         	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
	2   85   3   85   85   85   85   85   85

Table 6.--Cropland Management Considerations--Continued

Map symbol	Percent of	
and	map unit	considerations
component name		
644:		
Woodslake	5	Ponding
	j	Potential poor tilth and compaction
		Potential for ground-water contamination
		Potential for surface-water contamination
		Restricted permeability
		Wet soil moisture status
Strandquist	3	Excessive permeability
2014144120		Lime content
		Ponding
		Potential for ground-water contamination
		Potential for surface-water contamination
		Wet soil moisture status
		Wind erosion
645:		
Espelie	85	Ponding
-		Potential for ground-water contamination
		Potential for surface-water contamination
		Wet soil moisture status
		Wind erosion
Grano	   5	Ponding
GIANO	j 5	Potential for ground-water contamination
		Potential for surface-water contamination
		Wet soil moisture status
Hilaire	5	Excessive permeability
		Potential for ground-water contamination Wet soil moisture status
		Wind erosion
		Wind Clobion
Wildwood	5	High content of organic matter
		Limited available water capacity
		Ponding
		Potential for ground-water contamination
		Potential for surface-water contamination Restricted permeability
		Wet soil moisture status
		Wind erosion
	İ	
651:		
Thiefriver	85	Excessive permeability
	 	Lime content Ponding
	 	Potential for ground-water contamination
		Potential for surface-water contamination
		Wet soil moisture status
		Wind erosion
_	_	
Grano	5	Ponding
		Potential for ground-water contamination  Potential for surface-water contamination
		Wet soil moisture status
Huot	5	Excessive permeability
		Lime content
		Potential for ground-water contamination
	 	Wet soil moisture status Wind erosion
		wind Grosion

Table 6.--Cropland Management Considerations--Continued

Map symbol	Percent of	-
and	map unit	considerations
component name		
651:	 	
Wildwood	5	High content of organic matter Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status Wind erosion
	İ	
708: Rushlake	85     85   	Excessive permeability Limited available water capacity Potential for ground-water contamination Wind erosion
Corliss	6	Excessive permeability Limited available water capacity Potential for ground-water contamination Wind erosion
Redby	5	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion
Hangaard	3	Excessive permeability Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Piles and I		Water make 3
Pits, gravel	1 1	Not rated
712:	 	
Rosewood	85	Excessive permeability Lime content Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Deerwood	6	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Hangaard	5	Excessive permeability Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol	Percent of	Cropland management
and	map unit	considerations
component name		
710		
712: Ulen	4	Excessive permeability Lime content Limited available water capacity Potential for ground-water contamination Wet soil moisture status Wind erosion
721B: Corliss	85	Excessive permeability Limited available water capacity Potential for ground-water contamination Wind erosion
Rushlake	10	Excessive permeability Limited available water capacity Potential for ground-water contamination Wind erosion
Hangaard	4	Excessive permeability Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Pits, gravel	1	Not rated
. 5		
733:		
Berner	90	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Grygla	5	Excessive permeability Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Seelyeville	5	High content of organic matter   Ponding   Potential for ground-water contamination   Potential for surface-water contamination   Wet soil moisture status   Wind erosion
737:	İ	
Mahkonce	85	Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Auganaush	10	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status

Table 6.--Cropland Management Considerations--Continued

	Dames =	Guan 3 3
Map symbol and	Percent of   map unit	Cropland management considerations
component name	map unit	Considerations
737:		
Eckvoll	5	Excessive permeability Potential for ground-water contamination Wet soil moisture status Wind erosion
755:	 	
Woodslake	85     	Ponding Potential poor tilth and compaction Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status
Boash	8	Ponding Potential poor tilth and compaction Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Wildwood	5	High content of organic matter Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status Wind erosion
Dora	2	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status Wind erosion
767:		
Auganaush	90     	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Mustinka	5	Ponding Potential poor tilth and compaction Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Wildwood	3	High content of organic matter Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status Wind erosion
Mahkonce	2	Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol	Percent of	
and	map unit	considerations
component name		
T04		
794:	   85	Businesius manusakiliku
Clearriver	65	Excessive permeability Limited available water capacity
	 	Limited available water capacity Limited content of organic matter
	 	Potential for ground-water contamination
	 	Wind erosion
	 	WING GLOSION
Hiwood	   7	Acid soil
	, . 	Excessive permeability
	i i	Limited available water capacity
	i i	Limited content of organic matter
	j i	Potential for ground-water contamination
	j	Wet soil moisture status
	į į	Wind erosion
Meehan	5	Excessive permeability
		Limited available water capacity
		Potential for ground-water contamination
		Wet soil moisture status
		Wind erosion
Faunce	   3	Eugaggina namaahilitu
raunce	] 3   	Excessive permeability Limited available water capacity
	 	Limited available water capacity Limited content of organic matter
	 	Potential for ground-water contamination
	 	Wind erosion
	i i	
1002:	j i	
Fluvaquents, frequently	į į	
flooded	90	Flooding
		Ponding
		Potential for ground-water contamination
		Potential for surface-water contamination
		Wet soil moisture status
		Wind erosion
Seelyeville	   6	High content of organic matter
beeryeville		Ponding
	 	Potential for ground-water contamination
		Potential for surface-water contamination
	i	Wet soil moisture status
	i i	
Hapludalfs	2	Slope
	j	Limited content of organic matter
		Potential for ground-water contamination
		Potential for surface-water contamination
		Water erosion
		Wet soil moisture status
		Wind erosion
Water	2	Not rated
1030:		
Pits, gravel	   75	Not rated
, <b>3</b>	, 	
Udipsamments	20	Slope
-	i i	Excessive permeability
		Limited available water capacity
	į i	Limited content of organic matter
	i i	Potential for ground-water contamination
		Forential for ground-water contamination
	 	Potential for surface-water contamination

Table 6.--Cropland Management Considerations--Continued

Map symbol	Percent of	
and	map unit	considerations
component name		
1000		
1030: Corliss	2	Evgoggivo pormozbilitu
COLLISS	<b>Z</b>	Excessive permeability Limited available water capacity
		Potential for ground-water contamination
		Wind erosion
Karlstad	2	Excessive permeability
		Limited available water capacity
		Potential for ground-water contamination
		Wind erosion
Hangaard	1	Excessive permeability
	_	Limited available water capacity
		Ponding
		Potential for ground-water contamination
		Potential for surface-water contamination
		Wet soil moisture status
		Wind erosion
1031:		
Seelyeville, ponded	90	High content of organic matter
acceptance, person		Ponding
		Potential for ground-water contamination
		Potential for surface-water contamination
		Wet soil moisture status
Cathro	4	High content of organic matter
		Ponding   Potential for ground-water contamination
		Potential for surface-water contamination
		Wet soil moisture status
	İ	Wind erosion
Dora	3	High content of organic matter
		Ponding   Potential for ground-water contamination
		Potential for surface-water contamination
		Restricted permeability
		Wet soil moisture status
	İ	Wind erosion
Markey	3	Excessive permeability
		High content of organic matter
		Ponding
		Potential for ground-water contamination  Potential for surface-water contamination
		Wet soil moisture status
		Wind erosion
	İ	
1067:		
Fluvaquents, frequently flooded	60	Flooding
T100ded	00	Flooding   Ponding
		Potential for ground-water contamination
		Potential for surface-water contamination
	İ	Wet soil moisture status
	l i	Wind erosion
Hapludalfs	30	Slope
		Limited content of organic matter
		Potential for ground-water contamination  Potential for surface-water contamination
		Water erosion
		Wet soil moisture status
		Wind erosion
	l i	

Table 6.--Cropland Management Considerations--Continued

Map symbol	Percent of	-
and	map unit	considerations
component name		
1067: Seelyeville	5   5	High content of organic matter Ponding Potential for ground-water contamination
		Potential for surface-water contamination Wet soil moisture status
Water	5	Not rated
1133B:		
Skime	85     	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion
Hiwood	10	Acid soil Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion
Zippel	5	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
1134:		
Borup	   55	Lime content
2014		Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Glyndon	35   	Lime content Potential for ground-water contamination Wet soil moisture status Wind erosion
Augsburg, depressional	5	Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status Wind erosion
Skime	5	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol	Percent of	Cropland management
and	map unit	considerations
component name		
1144		
1144: Strathcona, depressional	45   	Excessive permeability Lime content Ponding Potential for ground-water contamination
		Potential for surface-water contamination Wet soil moisture status Wind erosion
Kratka, depressional	45     	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination
		Potential for surface-water contamination Wet soil moisture status Wind erosion
Kratka	5   	Excessive permeability Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
		Wind erosion
Northwood	5	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination
		Potential for surface-water contamination Wet soil moisture status Wind erosion
1154: Sax	90	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Wabanica	5	Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Cathro	3	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Woodslake	İ	Ponding Potential poor tilth and compaction Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status

Table 6.--Cropland Management Considerations--Continued

Map symbol	Percent of	
and	map unit	considerations
component name		
1150		
1158: Skagen	85	Lime content Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Percy	10	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Foxhome	5	Excessive permeability Potential for ground-water contamination Wet soil moisture status Wind erosion
1170:		
Skagen, very cobbly	85	Lime content Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Percy, very cobbly	10	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Foxhome	5	Excessive permeability Potential for ground-water contamination Wet soil moisture status Wind erosion
1179B:		
Moranville	85	Excessive permeability Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion
Baudette	5	Potential for ground-water contamination Potential for surface-water contamination Water erosion Wet soil moisture status Wind erosion
Hiwood	5	Acid soil Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion
Spooner	5	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol	Percent of	Cropland management
and	map unit	considerations
component name		
1101		
1181: Rosewood	50	Excessive permeability Lime content
		Limited available water capacity Ponding
	   	Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Ulen	   40 	Excessive permeability Lime content
		Limited available water capacity Potential for ground-water contamination Wet soil moisture status Wind erosion
Redby	5	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion
Deerwood	3	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Syrene	2	Excessive permeability Lime content Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
1182:		
Warroad	85     	Excessive permeability Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Wabanica	7	Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Enstrom	5   	Excessive permeability Potential for ground-water contamination Wet soil moisture status Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol	Percent of	
and	map unit	considerations
component name	<u>                                     </u>	
1182:		
Sax	3	High content of organic matter
		Ponding
	 	Potential for ground-water contamination  Potential for surface-water contamination
	 	Wet soil moisture status
	i i	Wind erosion
1187: Dora, ponded	   90	High gentent of excepts wetter
Dora, ponded	90	High content of organic matter Ponding
		Potential for ground-water contamination
		Potential for surface-water contamination
		Restricted permeability
	 	Wet soil moisture status
Seelyeville, ponded	4	High content of organic matter
	į į	Ponding
		Potential for ground-water contamination
		Potential for surface-water contamination Wet soil moisture status
		50-12 110-150410 504045
Wildwood	4	High content of organic matter
		Limited available water capacity
	 	Ponding  Potential for ground-water contamination
		Potential for surface-water contamination
	j j	Restricted permeability
		Wet soil moisture status
		Wind erosion
Boash	   2	Ponding
	į į	Potential poor tilth and compaction
		Potential for ground-water contamination
	 	Potential for surface-water contamination Wet soil moisture status
		Wet Boll Molbeare Beatab
1191:		
Sahkahtay	85	Excessive permeability
		Limited available water capacity Ponding
		Potential for ground-water contamination
	İ	Potential for surface-water contamination
		Wet soil moisture status
		Wind erosion
Cormant	5	Excessive permeability
		Limited available water capacity
		Ponding
		Potential for ground-water contamination  Potential for surface-water contamination
	i	Wet soil moisture status
	ļ	Wind erosion
Deerwood	   5	Excessive permeability
2001#00d	, , , , , , , , , , , , , , , , , , ,	High content of organic matter
	i i	Ponding
		Potential for ground-water contamination
	 	Potential for surface-water contamination Wet soil moisture status
	 	Wind erosion
	į i	

Table 6.--Cropland Management Considerations--Continued

Map symbol	Percent of	Cropland management
and	map unit	considerations
component name		
1191:		Businesius manusaliilikus
Karlstad	3 	Excessive permeability Limited available water capacity
	j i	Potential for ground-water contamination
		Wind erosion
Rodby	   2	Eugagaire namachilitu
Redby	<b>2</b>	Excessive permeability Limited available water capacity
		Limited content of organic matter
	İ	Potential for ground-water contamination
		Wet soil moisture status
	 	Wind erosion
1206:		
Cormant	55	Excessive permeability
		Limited available water capacity
		Ponding
	 	Potential for ground-water contamination  Potential for surface-water contamination
		Wet soil moisture status
	İ	Wind erosion
- "		
Redby	35	Excessive permeability Limited available water capacity
		Limited content of organic matter
	j i	Potential for ground-water contamination
		Wet soil moisture status
	 	Wind erosion
Hiwood	5	Acid soil
	j i	Excessive permeability
		Limited available water capacity
	 	Limited content of organic matter  Potential for ground-water contamination
		Wet soil moisture status
	j i	Wind erosion
T and find in an		Paragraph and a second
Leafriver	5 	Excessive permeability  High content of organic matter
		Ponding
	j i	Potential for ground-water contamination
		Potential for surface-water contamination
	 	Wet soil moisture status Wind erosion
1214:	l i	
Mustinka	90	Ponding
	 	Potential poor tilth and compaction  Potential for ground-water contamination
	 	Potential for surface-water contamination
	j	Wet soil moisture status
Espelie	4	Ponding Potential for ground-water contamination
		Potential for surface-water contamination
	j	Wet soil moisture status
		Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol	Percent of	
and	map unit	considerations
component name		
1214:		
Wildwood	4	High content of organic matter Limited available water capacity Ponding
		Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status Wind erosion
Dalbo	2	Potential for ground-water contamination   Wet soil moisture status
1274B:		
Redby	40	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion
Hiwood	30	Acid soil  Excessive permeability  Limited available water capacity  Limited content of organic matter  Potential for ground-water contamination  Wet soil moisture status  Wind erosion
Leafriver, wooded	15	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Clearriver	5	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wind erosion
Cormant	5	Excessive permeability Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Zimmerman	5	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wind erosion
1298: Borup	90	Lime content   Ponding   Potential for ground-water contamination   Potential for surface-water contamination   Wet soil moisture status   Wind erosion

Table 6.--Cropland Management Considerations--Continued

	1 =	
Map symbol	Percent of	
and component name	map unit 	considerations
	<u> </u>	
1298: Augsburg, depressional	3	Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination
Glyndon	       3	Restricted permeability Wet soil moisture status Wind erosion Lime content
	 	Potential for ground-water contamination Wet soil moisture status Wind erosion
Sago	2       	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Skime	2	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion
1302: Foldahl	   85     	Excessive permeability Potential for ground-water contamination Wet soil moisture status Wind erosion
Kratka	10       	Excessive permeability Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Foxhome	5     	Excessive permeability Potential for ground-water contamination Wet soil moisture status Wind erosion
1304: Glyndon	   85   	Lime content Potential for ground-water contamination Wet soil moisture status Wind erosion
Borup	10	Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Skime	5	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion

Table 6.--Cropland Management Considerations--Continued

Man cymhol	Dergent of	Cronland management
Map symbol and	Percent of   map unit	Cropland management considerations
component name		Complactations
1305: Hilaire	   85 	Excessive permeability Potential for ground-water contamination Wet soil moisture status
Parallia.		Wind erosion
Espelie	11 	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Grano	2	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Redby	2	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion
1314:		
Tacoosh	90	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Rifle	8	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Sax	2	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
1316: Wheatville	   85   	Lime content Potential for ground-water contamination Wet soil moisture status Wind erosion
Augsburg	13	Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status Wind erosion
Grano	2	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status

Table 6.--Cropland Management Considerations--Continued

Map symbol	Percent of	Cropland management
and	map unit	considerations
component name		
1326:		
Augsburg, depressional	45	Lime content
	İ	Ponding
		Potential for ground-water contamination
		Potential for surface-water contamination
		Restricted permeability Wet soil moisture status
		Wind erosion
Wabanica, depressional	45	Lime content
		Ponding Potential for ground-water contamination
		Potential for surface-water contamination
	İ	Wet soil moisture status
		Wind erosion
Sax	   6	High content of organic matter
Jax		Ponding
	İ	Potential for ground-water contamination
		Potential for surface-water contamination
		Wet soil moisture status Wind erosion
		WING CLOSION
Espelie	2	Ponding
		Potential for ground-water contamination
		Potential for surface-water contamination Wet soil moisture status
		Wind erosion
	İ	
Zippel	2	Ponding
		Potential for ground-water contamination  Potential for surface-water contamination
		Wet soil moisture status
	İ	Wind erosion
10055		
1327B: Karlstad	65	Excessive permeability
		Limited available water capacity
		Potential for ground-water contamination
		Wind erosion
Marquette	25	Excessive permeability
-	İ	Limited available water capacity
		Potential for ground-water contamination
		Potential for surface-water contamination Wind erosion
		WING CLOSION
Sahkahtay	7	Excessive permeability
		Limited available water capacity
		Ponding Potential for ground-water contamination
	 	Potential for surface-water contamination
	i	Wet soil moisture status
		Wind erosion
Redby	   3	Excessive permeability
nousy	, J 	Limited available water capacity
	i	Limited content of organic matter
		Potential for ground-water contamination
		Wet soil moisture status Wind erosion
		nina diopion

Table 6.--Cropland Management Considerations--Continued

Map symbol	Percent of	Cropland management
and	map unit	considerations
component name		
1328:		
Northwood, wooded	90	Excessive permeability High content of organic matter Ponding
		Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Berner, wooded	5	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Grygla	5	Excessive permeability Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
1333:	90	Wink soutont of sounding matters
Dora, wooded	90	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status Wind erosion
Lupton	4	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Wildwood	4	High content of organic matter Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status Wind erosion
Auganaush	2	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
1356: Water, miscellaneous	100	Not rated
1399B: Two Inlets	85	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol	Percent of	-
and	map unit	considerations
component name		
1399B:		
Wurtsmith	6	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion
Zimmerman	6	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wind erosion
Meehan	3	Excessive permeability Limited available water capacity Potential for ground-water contamination Wet soil moisture status Wind erosion
1401:		
Grygla, depressional	90	Excessive permeability Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Northwood, wooded	5	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Chilgren	3	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Grygla	2	Excessive permeability Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
1402:		
Leafriver, wooded	90	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Cormant	4	Excessive permeability Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion

Table 6.--Cropland Management Considerations--Continued

map unit	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion  Excessive permeability
       	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion  Excessive permeability
       	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion  Excessive permeability
       	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion  Excessive permeability
       	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion  Excessive permeability
2	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion  Excessive permeability
2	Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion  Excessive permeability
2	Potential for surface-water contamination Wet soil moisture status Wind erosion Excessive permeability
2   	Wet soil moisture status Wind erosion Excessive permeability
2   	Excessive permeability
2	
2	
ļ	Limited available water capacity
	Limited content of organic matter
ļ	Potential for ground-water contamination
I	Wet soil moisture status Wind erosion
	wind erosion
90	Excessive permeability
j	High content of organic matter
	Ponding
	Potential for ground-water contamination
	Potential for surface-water contamination
	Wet soil moisture status Wind erosion
	wind erosion
4	High content of organic matter
i	Ponding
j	Potential for ground-water contamination
j	Potential for surface-water contamination
	Wet soil moisture status
	Wind erosion
4	Excessive permeability
-	High content of organic matter
i	Ponding
į	Potential for ground-water contamination
j	Potential for surface-water contamination
	Wet soil moisture status
	Wind erosion
2	Excessive permeability
<b>2</b>	Ponding
	Potential for ground-water contamination
i	Potential for surface-water contamination
j	Wet soil moisture status
	Wind erosion
90	Lime content
<i>5</i> 0	Ponding
l I	Potential for ground-water contamination
ľ	Potential for surface-water contamination
İ	Wet soil moisture status
İ	
7	High content of organic matter
ļ	Ponding
ļ	Potential for ground-water contamination
ļ	Potential for surface-water contamination Wet soil moisture status
I	Wind erosion
	4 2 90

Table 6.--Cropland Management Considerations--Continued

Map symbol	Percent of	Cropland management
and	map unit	considerations
component name	i -	
1405:		
Wabanica	3	Lime content
		Ponding
		Potential for ground-water contamination
		Potential for surface-water contamination
		Wet soil moisture status
	 	Wind erosion
1414:	 	 
Nereson, very cobbly	l   85	   Potential for ground-water contamination
Nerebon, very cobbry	03 	Wet soil moisture status
	! 	Wind erosion
	İ	
Percy, very cobbly	10	Ponding
		Potential for ground-water contamination
		Potential for surface-water contamination
		Wet soil moisture status
Pelan	3	Excessive permeability
		Potential for ground-water contamination
		Wet soil moisture status
		Wind erosion
Forebone	   2	Bracagire normochility
Foxhome	<b>4</b> 	Excessive permeability   Potential for ground-water contamination
	 	Wet soil moisture status
	 	Wind erosion
	! 	
1428:	! 	
Karlsruhe	85	Excessive permeability
		Limited available water capacity
		Potential for ground-water contamination
		Wet soil moisture status
		Wind erosion
Syrene	10	Excessive permeability
	l I	Lime content
	 	Limited available water capacity   Ponding
	 	Potential for ground-water contamination
	! 	Potential for surface-water contamination
		Wet soil moisture status
	İ	Wind erosion
	İ	
Ulen	5	Excessive permeability
		Lime content
		Limited available water capacity
		Potential for ground-water contamination
		Wet soil moisture status
		Wind erosion
1444.	 	 
1444: Wurtsmith	   85	Excessive permeability
MGT CBIIIT CII	63	Excessive permeability   Limited available water capacity
	! 	Limited available water capacity   Limited content of organic matter
	! 	Potential for ground-water contamination
		Wet soil moisture status
	İ	Wind erosion
	İ	
Meehan	10	Excessive permeability
		Limited available water capacity
		Potential for ground-water contamination
		Wet soil moisture status
		Wind erosion
	l	

Table 6.--Cropland Management Considerations--Continued

Map symbol	Percent of	
and	map unit	considerations
component name		
1444:	 	
Clearriver	2	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wind erosion
Two Inlets	2	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wind erosion
Cormant	1	Excessive permeability Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
1448:		
Grano	90	Ponding Potential poor tilth and compaction Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Percy	5	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Augsburg	3	Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status Wind erosion
Woodslake	2	Ponding Potential poor tilth and compaction Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status
1449:	 	
Grano	90	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Percy	5     5   	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status

Table 6.--Cropland Management Considerations--Continued

Map symbol	Percent of	
and	map unit	considerations
component name		
1449:		
Augsburg	3	Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status Wind erosion
Woodslake	2	Ponding Potential poor tilth and compaction Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status
1807: Cathro, ponded	90	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Haug	4	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Seelyeville, ponded	<b>4</b>	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Percy	2     	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
1808:		
Markey, ponded	90         	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Leafriver	4	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Seelyeville, ponded	4   4   	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status

Table 6.--Cropland Management Considerations--Continued

Map symbol	Percent of	-
and	map unit	considerations
component name		
1808: Cormant	2	Excessive permeability Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
1918: Croke	   85   	Potential for ground-water contamination Wet soil moisture status Wind erosion
Augsburg	13	Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status Wind erosion
Grano	2           	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
1923B: Garnes, very stony	85     	Limited content of organic matter Potential for ground-water contamination Potential for surface-water contamination Surface stones Water erosion Wet soil moisture status
Chilgren	10	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Eckvoll	3	Excessive permeability Potential for ground-water contamination Wet soil moisture status Wind erosion
Pelan	2	Excessive permeability Potential for ground-water contamination Wet soil moisture status Wind erosion
1984: Leafriver	90	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol	Percent of	Cropland management
and	map unit	considerations
component name		
1984:		
Cormant	5	Excessive permeability Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Markey	3	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Redby	2	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion
W: Water	100	Not rated

Table 7.--Land Capability and Yields per Acre of Crops

(Yields are those that can be expected under a high level of management. They are for nonirrigated areas. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil.)

Man gymbol and	Percent of	Land	Parlow	02+4	Sunflowers	  Spring wheat
Map symbol and component name	map unit	capability	Barley	Oats	Sunflowers	Spring wheat
component name	map anic	capability	Bu	Bu	Lbs	Bu
 			80	85	1800	45
Colvin	85	2w	00	03	1	1 43
Bearden	5	2s				
Grano	5	2w				
Sax	5	6w				
 			20	40	600	15
Hiwood	85	4s	i		İ	İ
Redby	7	3w	į		İ	İ
Clearriver	3	4s	į		İ	İ
Cormant	3	4w	į		İ	İ
Zimmerman	2	4s	į		į	į
52			80	85	1800	45
Augsburg	85	2w	j			
Croke	5	1	j			
Grano	5	2w				
Sago	5	6w				
59			75	80	1300	40
Grimstad	85	2s				
Strathcona	12	2w				
Foxhome	3	3 ន				
64			60	70	900	30
Ulen	85	3s				
Rosewood	10	3w				
Redby	3	3w				
Rushlake	2	4s				
65		i	55	65	900	30
Foxhome	85	3s				
Strandquist	12	3w				
Skagen	3	2e				
67		i	85	100	2000	55
Bearden	85	2s				
Colvin	15	2w				
77		i	75	85	1300	40
Garnes	85	1				
Chilgren	10	2w			[	
Eckvoll	3	3s			!	!
Pelan	2	3s				
111			40	60	1000	30
Hangaard	90	4w			[	
Deerwood	5	6w			[	
Rushlake	3	4s				
Rosewood	2	3w				
116			35	55	700	20
Redby	85	3w				
Cormant	8	4w				
Hiwood	6	4s				
Leafriver	1	6w			!	1

Table 7.--Land Capability and Yields per Acre of Crops--Continued

***	Percent					 
Map symbol and	of	Land	Barley	Oats	Sunflowers	Spring wheat
component name	map unit	capability	Bu	Bu	Lbs	Bu
į	į	į	į		İ	İ
117			45	60	800	25
Cormant	85	4w				
Leafriver	7	6w				
Epoufette	3	3w				
Redby	3	3w				
Grygla, depressional	2	6w	į.		!	!
133			80	90	1800	45
Dalbo	85 l	1	00	30	1 1000	1 43
Mustinka	10	2w				}
Moranville	5	3s				
MOTUMVITIE	J	35	i			
145	į	į	55	65	900	30
Enstrom	85	4s				
Grygla	10	4w				
Redby	4	3w				
Pelan	1	3s	į.		!	!
147			50	65	800	30
Spooner	85	2w	50	65	000	]
Baudette	5	2w   2e			I I	I.
Grygla	5   5	4w			I I	I.
Sago	5   5	4w   6w			I I	I I
Sago	5	6w				
158B	i		20	35	500	15
Zimmerman	85	4s	į		İ	İ
Hiwood	6	4s	į		İ	İ
Two Inlets	6	4s	į		İ	Ì
Redby	3	3w	į		İ	İ
167B			70	85	1300	40
	ا	0 -	70	85	1300	40
Baudette	85	2e			1	
Spooner  Moranville	10   5	2w   3s			1	
moraliville	5	38   				
187	į	į	j		j	j
Haug	90	6w				
Percy	5	2w				
Cathro	3	6w				
Boash	2	2w				
191	 		30	50	700	20
Epoufette	85	3w				
Cormant	5	4w			i	Ì
Leafriver	5	6w	i		i	ì
Meehan	5	4w	į		İ	İ
İ	ĺ	į	į		İ	İ
202			30	50	600	20
Meehan	85	4w				
Cormant	8	4w				
Wurtsmith	5	4s			!	!
Leafriver	2	6w				
  205	 	l	40	50	800	25
Karlstad	85	3s	.		i	i
Sahkahtay	7	3w	i		i	i
Marquette	5	4s	i		İ	i
Redby	2	3w	i		İ	i
Pits, gravel	1		į		İ	į
	ļ					
242B		. !	30	40	600	20
Marquette	85	4s				
Karlstad	14	3s				1
Pits, gravel	1					1

Table 7.--Land Capability and Yields per Acre of Crops--Continued

	Percent	1				1
Map symbol and component name	of map unit	Land capability	Barley	Oats	Sunflowers	Spring wheat
		į	Bu	Bu	Lbs	Bu
280		-	55	70	900	30
Pelan	85	3s		, •		
Strandquist	10	3w	i			i
Garnes	3	1				İ
Marquette	1	4s				İ
Pits, gravel	1		į			İ
379			70	75	1500	40
Percy, very cobbly	90	3w				
Boash	3	2w	į		i	İ
Strandquist	3	3w	į		İ	İ
Haug	2	6w	į		İ	İ
Skagen, very cobbly	2	3e				
383			75	80	1700	45
Percy	90	2w	į		İ	İ
Boash	3	2w	į			
Strandquist	3	3w				
Haug	2	6 <b>w</b>				
Skagen	2	2e				
384			30	45	700	20
Percy, depressional	85	6w	į			
Haug	7	6w	į			
Percy	5	2w				
Boash	3	2w				
387			30	45	700	20
Roliss, depressional	85	6w	į		İ	İ
Haug	10	6w	į			
Roliss	5	2w	İ			
404			50	65	800	30
Chilgren	85	2w	į		İ	İ
Garnes	5	1	į		İ	İ
Grygla	5	4w	į		İ	
Haug	5	6w				
412			60	70	1300	40
Mavie	85	3w	į			
Foxhome	5	3s				
Northwood	5	6w				
Percy, very cobbly	5	3w				
432			60	70	1300	40
Strandquist	85	3w	j			
Percy, very cobbly		3w				
Haug		6w			!	
Boash		2w			!	
Foxhome	3	3s				
433		i				
Syrene, depressional		6w				
Deerwood		6w			!	
Rosewood		3w				
Syrene	5	4w				
435			55	65	1000	30
Syrene		4w				
Rosewood		3w			!	
Syrene, depressional		6w			!	
Karlsruhe		4e			1	
Deerwood	2	6w				

Table 7.--Land Capability and Yields per Acre of Crops--Continued

Map symbol and	Percent of	Land	Barley	Oats	Sunflowers	  Spring wheat
component name	map unit	capability	Bu	Bu	Lbs	   Bu
420			CF	7.5	1400	10
439Strathcona		2w	65	75	1400	40
Northwood		6w			1	I I
Percy		2w	l I		1	1
Grimstad		2s				
Strandquist		3w				
481			65	70	1400	40
Kratka	85	3w				
Northwood	5	6w	į		İ	İ
Percy	5	2w				
Enstrom	3	4s				
Strandquist	2	3w				
482		i	55	65	1100	35
Grygla	85	4w				
Chilgren		2w				
Grygla, depressional		6w				
Enstrom	-	4s				
Northwood	2	6w				 
532		i i				i
Sago	90	6 <b>w</b>				
Cathro	5	6w				
Zippel	5	2w				
534		i				
Mooselake	90	6w				
Bullwinkle		6w				
Dora		6w				
Tawas	3	6w				
540		i				
Seelyeville	90	6 <b>w</b>				
Cathro	4	6w				
Dora		6w				
Markey	3	6w				
541		i				i
Rifle		6w				
Tacoosh	10	6w				
543		i				
Markey	90	6w				
Cormant		4w				
Seelyeville	5	6w				
544		i				
Cathro	90	6w				
Percy, very cobbly		3w				
Grygla		4w				
Seelyeville	3	6w				
546		į				
Lupton		7w				
Bullwinkle		6w				
Dora Tawas	3	6w 6w			I I	I I
tawas	3	6w			1	
547		į	į			
Deerwood	90	6w				
Markey		6w				I
Rosewood Syrene	3	3w 4w			I I	I I
olrene	٠	-z-w			1	1

Table 7.--Land Capability and Yields per Acre of Crops--Continued

Map symbol and	Percent of	Land   capability	Barley	Oats	   Sunflowers	  Spring wheat
component name	map unit	capability	Bu	Bu	Lbs	Bu
550						
Dora	   90	6w				
Boash	4	2w	i			
Seelyeville	3	6w				
Woodslake	3	3w	į		į	į
561						
Bullwinkle	90	6w				
Lupton	4	7w				
Northwood, wooded	4	6w				
Chilgren	2   	2w			 	
563					j	
Northwood	90	6w				
Grygla	4	4w				
Berner	3     3	4w   3w			 	
-		i	i		İ	i
565			55	65	900	30
Eckvoll	85     5	3s   2w				
ChilgrenGrygla	5     5	2w   4w	l		I I	I I
Hiwood	5	4s			İ	
568			75	80	   1700	45
Zippel	   85	2w	75	80	1700	45
Augsburg, depressional	5	6w				 
Sago	5	6w				
Skime	5	4s	į		ļ	į
569	 		75	80	1800	45
Wabanica		2w	, ,	00	1000	
Warroad	6	3w				
Sax	4	6w	į		İ	İ
Grano	3	2w	į		İ	İ
Enstrom	2	4s				
570			20	30	500	15
Faunce	85	4s				
Clearriver	7	4s				
Zimmerman	4	4s				
Meehan	3	4w				
Pits, gravel	1		l I		 	
581		į	65	75	1500	40
Percy	90	2w				
Haug	5	6w				
Boash Skagen	3     2	2w   2e				
bhagen	-	10			İ	
582			65	80	1700	40
Roliss	85	2w				
Roliss, depressional	7     5	6w   2w				
Haug	3	2w			l I	
	ļ	į				
583 Nereson	   85	1	80	90	1900	45
Percy	85     10	1   2w				
Pelan	10	3s				
Foxhome	3	3s			i	i
	į i				i	i

Table 7.--Land Capability and Yields per Acre of Crops--Continued

Map symbol and	Percent of	Land	Barley	Oats	Sunflowers	  Spring wheat
component name	map unit	capability	partey	Vals	Junitowers	wheat
			Bu	Bu	Lbs	Bu
Tawas	90	6w				
Leafriver	4	6w			-	
Lupton	4	7w				
Cormant	2	4w				
						i
630	į	į			j	j
Wildwood	90	6w				
Boash	4	2w				
Dora	4	6w			!	!
Espelie	2	2w				
643			70	80	1200	40
Huot	85	2s	į		İ	i
Thiefriver	12	2w	į		İ	İ
Redby	3	3w	j		İ	İ
!		ļ				
644	0.5	2	70	80	1600	40
Boash	85	2w				
Percy  Woodslake	7   5	2w   3w				
Strandquist	3	3w				
berandquibe	J	5w				
645	j	į	65	75	1400	40
Espelie	85	2w				
Grano	5	2w				
Hilaire	5	2s				
Wildwood	5	6w				
651			65	75	1400	40
Thiefriver	85	2w	05	75	1 1400	1 40
Grano	5	2w			i i	
Huot	5	2s	i		ì	İ
Wildwood	5	6w			İ	İ
İ	İ	į	j		İ	İ
708	ļ		25	40	600	20
Rushlake	85	4s			!	!
Corliss	6	4s				
Redby	5	3w				
Hangaard  Pits, gravel	3   1	4w				I
rits, gravei	±					
712	ľ	i	55	70	1000	30
Rosewood	85	3w				
Deerwood	6	6w	į		İ	İ
Hangaard	5	4w	į		Ì	İ
Ulen	4	3s				
F015	ļ	ļ				
721B	0.5	4 =	25	40	500	15
Corliss  Rushlake	85   10	4s	ļ		1	I
Hangaard	4	4s   4w			1	I I
Pits, gravel	1 1		I			
j	-	i				
733	İ	į				i
Berner	90	4w	į			
Grygla	5	4w	j			
Seelyeville	5	6 <b>w</b>	İ		!	!
		ļ				
737	0.5	0	75	85	1400	45
Mahkonce	85	2s			1	I I
Auganaush  Eckvoll	10   5	2w   3s			1	I I
BCVA011	ا د	J 8			1	1

Table 7.--Land Capability and Yields per Acre of Crops--Continued

Map symbol and	Percent of	Land	Barley	Oats	Sunflowers	  Spring wheat
component name	map unit	capability	Bu	Bu	Lbs	Bu
755		l I	25	35	700	20
Woodslake	85	3w	23	33	700	1 20
Boash	8	2w	l			I I
Wildwood	5	6w	l			I I
Dora	2	6w	l			I I
Dola	4					
767		i	65	75	1100	35
Auganaush	90	2w				
Mustinka	5	2w	į		i	İ
Wildwood	3	6w	į		İ	İ
Mahkonce	2	2s	į		į	
794			25	40	700	20
Clearriver	85	4s	j		İ	
Hiwood	7	4s	į		İ	
Meehan	5	4w				
Faunce	3	4s				
1002						
Fluvaquents, frequently	i	į	į		İ	İ
flooded	90	6w	į		İ	İ
Seelyeville	6	8w	į		İ	İ
Hapludalfs	2	6e	į		İ	İ
Water	2		į		į	ļ
1030						
Pits, gravel	75		İ		i	
Udipsamments	20	8s	į		İ	İ
Corliss	2	4s	į		İ	İ
Karlstad	2	3s	į		İ	İ
Hangaard	1	4w	į		į	į
1031					 	
Seelyeville, ponded	90	8w	İ		i	
Cathro	4	6w	į		İ	İ
Dora	3	6w	į		İ	İ
Markey	3	6w	į		ļ	İ
1067					 	
Fluvaquents, frequently	i	į	į		İ	İ
flooded	60	6w	į		İ	İ
Hapludalfs	30	6e	į		İ	İ
Seelyeville	5	8w	į		İ	
Water	5				ļ	
1133B			25	40	700	15
Skime	85	4s	į		İ	İ
Hiwood	10	4s	į		İ	
Zippel	5	2w	į		į	ļ
1134			80	90	1900	50
Borup	55	2w		50		
Glyndon		2s	i		i	i
Augsburg, depressional		6w	İ		i	
Skime		4s	i		į	į
1144		ļ	25	45	700	20
Strathcona, depressional	45	6w	25	43	700	20
Kratka, depressional		6w	I			
Kratka		3w	I			
Northwood		6w	I			
		· · ·	l I		1	1

Table 7.--Land Capability and Yields per Acre of Crops--Continued

Man gimbal and	Percent of	Land	Barley	Oats	Sunflowers	Carine
Map symbol and component name	map unit	capability	Barley	Oats	Sunflowers	Spring wheat
			Bu	Bu	Lbs	Bu
1154						
Sax	90	6w			i	
Wabanica	5	2w	i		i	
Cathro	3	6w	i		i	
Woodslake	2	3w	į		į	į
1158			80	90	1900	45
Skagen	85	2e	į		İ	İ
Percy	10	2w	į		İ	İ
Foxhome	5	3s	į		İ	į
1170			75	80	1700	40
Skagen, very cobbly	85	3e	į		İ	İ
Percy, very cobbly		3w	į		İ	İ
Foxhome	5	3s	į		į	į
1179B			60	70	900	35
Moranville	85	3s			İ	İ
Baudette	5	2e	į		İ	İ
Hiwood	5	4s	į		İ	İ
Spooner	5	2w	į		İ	į
1181			55	60	900	30
Rosewood	50	3w	į		İ	İ
Ulen	40	3s	į		İ	İ
Redby	5	3w	į		İ	İ
Deerwood	3	6w				
Syrene	2	4w				
1182			65	75	1400	40
Warroad	85	3w	į		İ	İ
Wabanica	7	2w	į		İ	İ
Enstrom	5	4s				
Sax	3	6w				
1187		i				
Dora, ponded	90	8w				
Seelyeville, ponded	4	8w				
Wildwood	4	6w				
Boash	2	2w				
1191			30	50	700	20
Sahkahtay	85	3w				
Cormant	5	4w				
Deerwood	5	6w				
Karlstad		3s				
Redby	2	3w				
1206		İ	35	55	700	25
Cormant	55	4w			!	!
Redby	35	3w			!	!
Hiwood	5	4s				
Leafriver	5	6w				
1214			75	85	1600	45
Mustinka	90	2w				
Espelie	4	2w				
Wildwood	4	6w				
Dalbo	2	1			1	1

Table 7.--Land Capability and Yields per Acre of Crops--Continued

Map symbol and	Percent of	Land	Barley	Oats	Sunflowers	Spring wheat
component name	map unit	capability		Juca		wirear
			Bu	Bu	Lbs	Bu
1274B		ļ				
Redby	40	3w				
Hiwood	30	4s				İ
Leafriver, wooded	15	6w			İ	i
Clearriver	5	4s	i		İ	i
Cormant	5	4w	į			İ
Zimmerman	5	4s	į		į	İ
1298			80	85	1800	45
Borup	90	2w				
Augsburg, depressional	3	6w	į		İ	İ
Glyndon	3	2s	į		İ	İ
Sago	2	6w				
Skime	2	4s				
1302			65	75	1200	35
Foldahl	85	2s	į			İ
Kratka	10	3w	į		İ	İ
Foxhome	5	3s	į			
1304		ļ	85	100	2000	55
Glyndon	85	2s				
Borup	10	2w	į		İ	İ
Skime	5	4s	į			
1305			65	75	1200	35
Hilaire	85	2s				
Espelie	11	2w	į			İ
Grano	2	2w	į		İ	İ
Redby	2	3w				
1314						
Tacoosh	90	6 <b>w</b>	į			İ
Rifle	8	6w	į		İ	İ
Sax	2	6w				
1316			80	85	2000	50
Wheatville	85	2s	į		İ	İ
Augsburg	13	2w	į		İ	İ
Grano	2	2w				
1326			25	35	700	20
Augsburg, depressional	45	6w	į		İ	İ
Wabanica, depressional	45	6w	į		İ	İ
Sax	6	6w	į		İ	İ
Espelie	2	2w				
Zippel	2	2w				
1327B			35	45	700	25
Karlstad	65	3s	j			
Marquette	25	4s			[	
Sahkahtay	7	3w			!	!
Redby	3	3w				
1328		i				
Northwood, wooded	90	6w				
Berner, wooded	5	6w			!	!
Grygla	5	4w				
1333						
Dora, wooded	90	6w	j			
Lupton	4	7w				
Wildwood	4	6w			!	!
Auganaush	2	2w				

Table 7.--Land Capability and Yields per Acre of Crops--Continued

Map symbol and component name	Percent     of     map unit	Land   capability	Barley	Oats	   Sunflowers	  Spring wheat
Component name	map unic	Capability	Bu	Bu	Lbs	Bu
1356.					l I	
Water, miscellaneous		į				
1399B	 		20	30	500	15
Two Inlets	85	4s	į		İ	İ
Wurtsmith	6	4s				
Zimmerman		4s				
Meehan	3   	4w			 	
1401	!	į				
Grygla, depressional		6w				
Northwood, wooded		6w				
Chilgren		2w				
Grygla	2	4w			 	
1402		į			į	
Leafriver, wooded		6w				
Cormant Tawas		4w   6w	ļ		l I	
Redby	2	3w				
4404		ļ				
1404		6				
Berner, wooded Lupton		6w   7w			 	
Northwood, wooded	!	6w			 	1
Grygla		4w	İ		İ	
1405		ļ				
Lallie		8w				
Sax	7	6w				
Wabanica	3	2w	į		İ	
1414	 		75	80	1700	40
Nereson, very cobbly	!	3e			2700	
Percy, very cobbly	:	3w	i		i	İ
Pelan	:	3s	į		İ	İ
Foxhome	2	3s				
1428	 		25	40	800	20
Karlsruhe	85	4e	į		İ	İ
Syrene	10	4w				
Ulen	5	3s				
1444	 		20	40	600	15
Wurtsmith		4s	j			
Meehan		4w			ļ.	!
Clearriver		4s			]	
Two Inlets		4s   4w				
Cormant	1	4w			 	
1448		į	70	80	1600	40
Grano		2w			ļ	!
Percy		2w				
Augsburg Woodslake		2w   3w			 	
,	 		i			
1449Grano		2**	75	85	1900	45
Percy		2w   2w			I I	
Augsburg		2w			 	
Woodslake		3w	i		i	i
	i i	i			i	i

Table 7.--Land Capability and Yields per Acre of Crops--Continued

	Percent					
Map symbol and	of	Land	Barley	Oats	Sunflowers	Spring whea
component name	map unit	capability				
I			Bu	Bu	Lbs	Bu
	I					
.807						
Cathro, ponded	90	8w				
Haug	4	6w				
Seelyeville, ponded	4	8w				
Percy	2	3w				
808	 				 	
Markey, ponded	90	8w	į		İ	İ
Leafriver	4	6w	į		İ	İ
Seelyeville, ponded	4	8w	į		İ	İ
Cormant	2	4w	į		ĺ	į
 	 		80	85	   2000	50
Croke	85	1	į		İ	İ
Augsburg	13	2w	į		İ	İ
Grano	2	2w	į		į	į
Garnes, very stony	85	2e	į		İ	İ
Chilgren	10	2w	į		İ	İ
Eckvoll	3	3s	į		İ	İ
Pelan	2	3s	į		ĺ	į
Leafriver	90	6w	į		İ	İ
Cormant	5	4w	į		İ	İ
Markey	3	6w	į		İ	İ
Redby	2	3w	į			
Water	ĺ	į	į		I	

Table 8.--Land Capability and Yields per Acre of Pasture

(Yields are those that can be expected under a high level of management. They are for nonirrigated areas. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil.)

down on or b	man	Land	Alfalfa hay		Reed
component name	map unit	capability	Tons	alfalfa AUM*	canarygrass
 <b>4</b> 7			3.0	4.5	5.5
Colvin	85 l	2w	] 3.0	1 4.5	3.3
Bearden	5	2s	1		
Grano	5 I	2s 2w	1		
Sax	5	6w			
47					
Colvin	85	2w	i	i	i
Bearden	5	2s	i	i	i
Grano	5	2w	i	i	i
Sax	5	6w			į
48B	 		4.0	4.5	
Hiwood	85	4s	İ	i	İ
Redby	7	3w		i	i
Clearriver	3	4s		i	i
Cormant	3	4w	i	i	i
Zimmerman	2	4s			į
52	 		3.0	5.0	5.5
Augsburg	85	2w	i	i	i
Croke	5	1	i	i	i
Grano	5	2w	İ	i	İ
Sago	5	6w	İ		į
59			4.2	5.5	
Grimstad	85	2s			
Strathcona	12	2w		İ	
Foxhome	3	3s			
64	 		4.2	5.0	
Ulen	85	3s	İ	i	İ
Rosewood	10	3w	İ	i	İ
Redby	3	3w	İ	i	İ
Rushlake	2	4s	İ		į
65	 		4.2	5.5	
Foxhome	85	3s	İ	İ	i
Strandquist	12	3w	İ	İ	İ
Skagen	3	2e			į
67	 		3.5	5.0	
Bearden	85	2s	İ	İ	İ
Colvin	15	2w	į		į
  77	 		4.5	6.0	
Garnes	85	1			
Chilgren	10	2w	İ	İ	İ
Eckvoll	3	3s	İ	İ	İ
Pelan	2	3s			İ
111	 		2.5	3.5	4.0
Hangaard	90	4w	İ	İ	i
Deerwood	5	6w	i	i	i
Rushlake	3	4s	i	i	i
I I			1	1	

Table 8.--Land Capability and Yields per Acre of Pasture--Continued

Map symbol and	Percent of	Land	Alfalfa hay	Bromegrass-	Reed
component name	map unit	capability		alfalfa	canarygrass
			Tons	AUM*	Tons
ļ	į		į		į
116			3.5	4.0	
Redby	85	3w			
Cormant	8	4w			
Hiwood	6	4s			
Leafriver	1	бw			
 117			3.0	3.5	4.0
Cormant	85	4w	İ	İ	İ
Leafriver	7	6w	İ	İ	i
Epoufette	3	3w	İ	İ	i
Redby	3	3w	İ	İ	i
Grygla, depressional	2	6w	İ	İ	İ
122					
133	0.5	1	4.5	6.0	
Dalbo	85	1	I I	1	I I
Mustinka	10	2w		1	1
Moranville	5	3s	 	1	
145	ļ		4.0	5.0	i
Enstrom	85	4s			
Grygla	10	4w			
Redby	4	3w			
Pelan	1	3s	ļ		ļ
 147			2.5	4.0	5.0
Spooner	85 I	2w	1 2.3		3.0
Baudette	5	2 e		1	
Grygla	5	4w		1	
Sago	5	6w	i		ì
i	į		j	İ	į
158B			3.5	4.0	
Zimmerman	85	4 s			
Hiwood	6	4 s			
Two Inlets	6	4 s			
Redby	3	3w	 	1	
167B			4.5	6.0	
Baudette	85	2e	ĺ	İ	İ
Spooner	10	2w	ĺ	İ	İ
Moranville	5	3s	ļ.	!	ļ
   187					6.0
Haug	90	6w			
Percy	5	2w			1
Cathro	3	6w			1
Boash	2	2w	İ		
į	į		!		!
191	0.5		3.0	3.5	4.0
Epoufette	85	3w	!		1
Cormant	5	4w			Į.
Leafriver	5	6w			
Meehan	5	4w	I I	1	
202			3.5	4.0	
Meehan	85	4w			
Cormant	8	4w			
Wurtsmith	5	4s	I		1
Leafriver	2	6w	1	1	1

Table 8.--Land Capability and Yields per Acre of Pasture--Continued

Map symbol and	Percent of	Land	Alfalfa hay	Bromegrass-	Reed
component name	map unit	capability		alfalfa	canarygrass
ļ	l I		Tons	AUM*	Tons
205			4.0	5.0	
Karlstad	85	3s	İ	İ	İ
Sahkahtay	7	3w			
Marquette	5	4s			
Redby	2	3w		!	
Pits, gravel	1				
   242B	 		3.5	4.0	
Marquette	85 I	4s	3.3		
Karlstad	14	3s			
Pits, gravel	1		İ	İ	İ
İ	ĺ			İ	İ
280			4.0	5.0	
Pelan	85	3s			
Strandquist	10	3w			
Garnes	3	1			
Marquette  Pits, gravel	1	4s	 		
	± 1				
379	i		3.0	4.5	5.5
Percy, very cobbly	90	3w			
Boash	3	2w		İ	İ
Strandquist	3	3w	İ	İ	İ
Haug	2	6w		İ	İ
Skagen, very cobbly	2	3e		]	
	ļ				
383	00	0	3.0	4.5	5.5
Percy  Boash	90	2w 2w			
Strandquist	3	2w 3w	 		
Haug	2	6w			
Skagen	2	2e			
j	İ		İ	İ	İ
384	ĺ				5.5
Percy, depressional	85	6w			
Haug	7	6w			
Percy	5	2w			
Boash	3	2w			
   387	l I				5.5
Roliss, depressional	85	бw			5.5
Haug	10	6w			I I
Roliss	5	2w			
	ĺ			İ	İ
404	j		2.5	4.0	5.0
Chilgren	85	2w			
Garnes	5	1			
Grygla	5	4w			
Haug	5	бw			
410	ļ			1 2 5	1 4 5
412	0E	2	3.0	3.5	4.5
Mavie  Foxhome	85   5	3w 3s	 		
Northwood	5   5	5 s 6 w			
Percy, very cobbly	5	3w			i
	İ		İ	İ	i
432	į		3.0	3.5	4.5
Strandquist	85	3w			
Percy, very cobbly	5	3w			
Haug	4	6w		!	
Boash	3	2w			
Foxhome	3	3s			

Table 8.--Land Capability and Yields per Acre of Pasture--Continued

Man armhal	Percent	Tand	 	Promocre	Poor
Map symbol and	of   map unit	Land	Alfalfa hay	Bromegrass-	Reed
component name	map unit	capability		AUM*	canarygrass
	l I		Tons	AUM*	Tons
433	I				4.5
Syrene, depressional	85	6w			
Deerwood	5	6w			
Rosewood	5	3w		 	
Syrene	5	4w		 	
byrene	j	- "			
435	i		3.0	3.5	4.0
Syrene	85	4w	į	İ	i
Rosewood	5	3w	İ	İ	i
Syrene, depressional	5	6w	į	İ	i
Karlsruhe	3	4e	į	İ	i
Deerwood	2	6w	İ	İ	İ
i	į		į	İ	İ
439	ĺ		3.0	4.0	4.5
Strathcona	85	2w			
Northwood	5	6w			
Percy	5	2w			
Grimstad	3	2s			
Strandquist	2	3w			
481			3.0	4.0	4.5
Kratka	85	3w			
Northwood	5	6w			
Percy	5	2w			
Enstrom	3	4s			
Strandquist	2	3w			
482	ļ		2.8	4.0	4.5
Grygla	85	4w			
Chilgren		2w			
Grygla, depressional		6w			ļ
Enstrom	,	4 s			ļ
Northwood	2	6w			
532	I				6.0
Sago	00	C			6.0
Cathro	90   5	6w 6w		 	
	5   5	ow 2w		 	
Zippel	5   	2W	I I	I I	
534					
Mooselake	90	6w			
Bullwinkle	4	6w			
Dora	3	6w			
Tawas	3	6w			
	- I	- "			
540	i				5.5
Seelyeville	90	6w	i	i	
Cathro	4	6w	i	i	i
Dora	3	6w	i	i	i
Markey	3	6w	i	i	i
- 	i		İ	İ	İ
541	i				5.5
Rifle	90	6w	İ	İ	İ
Tacoosh	10	6w	İ	İ	İ
i	į		İ	İ	İ
543	į				5.0
Markey	90	6w			
Cormant	5	4w	İ	İ	İ
Seelyeville	5	6w			
	i		I	I .	1

Table 8.--Land Capability and Yields per Acre of Pasture--Continued

Map symbol and component name	of map unit	Land capability	Alfalfa hay	Bromegrass-	Reed canarygrass
	map unit	capability	Tons	AUM*	Tons
544					6.0
Cathro	90	6w		İ	
Percy, very cobbly	4	3w		İ	i
Grygla	3	4w		İ	i
Seelyeville	3	6w			
546					
Lupton	90	7w	į	İ	i
Bullwinkle	4	6w	İ	İ	İ
Dora	3	6w	İ	İ	İ
Tawas	3	6w	į		
547					5.5
Deerwood	90	6w	İ	İ	İ
Markey	4	6w	İ	İ	İ
Rosewood	3	3w	İ	İ	İ
Syrene	3	4w	į	į	į
550					6.0
Dora	90	6w	İ	İ	i
Boash	4	2w	į	İ	i
Seelyeville	3	6w	į	İ	i
Woodslake	3	3w	į	į	į
561					6.0
Bullwinkle	90	6w		İ	
Lupton	4	7w		İ	i
Northwood, wooded	4	6w		İ	i
Chilgren	2	2w	İ	İ	İ
563					5.5
Northwood	90	бw			] 3.3
Grygla	4	4w	I	1	
Berner	3	4w		1	
Strandquist	3	3w	İ		
565	ļ		4.3	5.0	
Eckvoll	85 I	3s	1 4.3	3.0	
Chilgren	5	2w	I	I I	
Grygla	5	4w	I		
Hiwood	5	4s	İ		i
	į				
568		_	3.0	4.5	5.5
Zippel	85	2w			
Augsburg, depressional	5	6w			
Sago  Skime	5 5	6w 4s	l I		
	i		İ	İ	
569			3.0	4.5	5.5
Wabanica	85	2w			
Warroad	6	3w			
Sax	4	6w	!	!	ļ.
Grano  Enstrom	3   2	2w 4s			
HID CI OM	<b>∠</b>	75			
570			3.0	3.5	į
Faunce	85	4s	!	!	ļ.
Clearriver	7	4s	!	!	ļ.
Zimmerman	4	4s	!	!	ļ.
Meehan	3	4w	!	1	ļ.
Pits, gravel	1				

Table 8.--Land Capability and Yields per Acre of Pasture--Continued

Map symbol and	Percent of	Land	  Alfalfa hay	  Bromegrass-	Reed
component name	map unit	capability	Allalia hay	alfalfa	canarygrass
			Tons	AUM*	Tons
581			3.0	4.5	5.5
Percy	90	2w	]		3.3
Haug	5	6w	i		i
Boash	3	2w			
Skagen	2	2e			
582			3.0	4.5	5.5
Roliss	85	2w	İ	į	İ
Roliss, depressional	7	6w	İ	İ	İ
Boash	5	2w			
Haug	3	6w			
583			4.5	6.0	
Nereson	85	1			
Percy	10	2w			
Pelan	3	3s	1		
Foxhome	2	3s			
627					5.0
Tawas	90	6w			
Leafriver	4	6w			
Lupton	4	7w			
Cormant	2	4w			
630					6.0
Wildwood	90	6w			
Boash	4	2w			
Dora	4	6w			
Espelie	2	2w			
643			4.0	5.5	
Huot	85	2s			
Thiefriver	12	2w			
Redby	3	3w			
644			3.0	4.5	5.5
Boash	85	2w			
Percy	7	2w			
Woodslake	5	3w			
Strandquist	3	3w			
645			3.0	4.5	4.5
Espelie	85	2w	1		
Grano	5	2w			
Hilaire	5	2s			
Wildwood	5	6w			
651			3.0	4.5	4.5
Thiefriver	85	2w			
Grano	5	2w	1		
Huot	5	2s			
Wildwood	5	6w			
708			4.0	5.0	
Rushlake	85	4 s	1		
Corliss	6	4 s	1		
Redby	5	3w			
Hangaard	3	4w	[		1
Pits, gravel	1				

Table 8.--Land Capability and Yields per Acre of Pasture--Continued

	Domest		I		
Map symbol and	Percent of	Land	  Alfalfa hay	  Bromegrass-	Reed
component name	map unit	capability		alfalfa	canarygrass
			Tons	AUM*	Tons
	İ		ļ.	ļ	!
712			3.0	3.5	4.0
Rosewood	85	3w			
Deerwood	6	6w			
Hangaard	5   4	4w 3s			
Ulen	4	38		1	
721B			3.0	3.5	
Corliss	85	4s			i
Rushlake	10	4s	i	İ	i
Hangaard	4	4w	İ	İ	İ
Pits, gravel	1		İ	İ	İ
			[		]
733					5.5
Berner	90	4w			
Grygla	5	4w			
Seelyeville	5	бw	 		
737			4.5	6.0	
Mahkonce	85	2s			
Auganaush	10	2w	i		i
Eckvoll	5	3s	i		
	İ		į	İ	İ
755	ĺ				6.0
Woodslake	85	3w			
Boash	8	2w			
Wildwood	5	6w			
Dora	2	6 <b>w</b>			
767			3.0	4.0	5.5
Auganaush	90	2w	] 3.0	1 4.0	] 5.5
Mustinka	5	2 w		I I	
Wildwood	3	6w			
Mahkonce	2	2s	i		i
	i		i	İ	İ
794	İ		4.0	5.0	
Clearriver	85	4 s			
Hiwood	7	4 s			
Meehan	5	4w			
Faunce	3	4s			
1002					1 4 5
1002 Fluvaquents, frequently					4.5
flooded	90	6w			
Seelyeville	6	8w			
Hapludalfs	2	6e	i	İ	
Water	2		i	i	i
	İ			1	
1030					
Pits, gravel	75		[		]
Udipsamments	20	8s	ļ.		!
Corliss	2	4s	Į.		1
Karlstad	2	3s			1
Hangaard	1	4w	I I		
1031					
Seelyeville, ponded	90	8w			
Cathro	4	6w	i		
Dora	3	6w	i	i	i
Markey	3	6w	i	i	i
_	i		i	İ	i

Table 8.--Land Capability and Yields per Acre of Pasture--Continued

Map symbol and component name	of   map unit	Land capability	Alfalfa hay	Bromegrass-	Reed canarygrass
		oupubliloj	Tons	AUM*	Tons
1065					
1067	I				4.5
Fluvaquents, frequently	60 l	6w	l I		
flooded  Hapludalfs	30	6w 6e	l I		
Seelyeville	5	8w	 	I I	I I
Water	5 I		 		I I
	j				
1133B			4.2	4.5	
Skime	85	4s	!		
Hiwood	10	4s	!		
Zippel	5	2w			
  1134	 		3.5	4.5	
Borup	55	2w	İ	İ	İ
Glyndon	35	2s	i		
Augsburg, depressional	5	6w	i		
Skime	5	4 s	İ		
				!	
1144	45	6			5.0
Strathcona, depressional	45	6w			
Kratka, depressional	45	6w			
Kratka	5	3w			
Northwood	5   I	бw	 	 	
1154					6.0
Sax	90	6w			
Wabanica	5	2w			
Cathro	3	6w			
Woodslake	2	3w			
 	 		4.5	6.0	
Skagen	85	2e	İ	İ	İ
Percy	10	2w	į	İ	İ
Foxhome	5	3s	İ	İ	İ
1150					
1170	ا	2 -	4.5	6.0	
Skagen, very cobbly	85	3 e			
Percy, very cobbly  Foxhome	10   5	3w 3s	l I	1	
FOXHOME	5	38	 		
1179B	İ		4.3	5.5	i
${\tt Moranville} $	85	3s			
Baudette	5	2e			
Hiwood	5	4s			
Spooner	5	2w			
 	 		3.5	4.0	
Rosewood	50	3w			i
Ulen	40	3s	i	i	i
Redby	5	3w	i	i	i
Deerwood	3	6w	i	i	i
Syrene	2	4w	İ	i	İ
	ļ				
1182	0.5	3	3.0	4.5	4.5
Warroad	85	3w	I I	I I	I I
Wabanica	7	2w	I I	I I	I I
Enstrom	5	4s	I I	I I	I I
×3v	3	6w	1	1	I

Table 8.--Land Capability and Yields per Acre of Pasture--Continued

Map symbol and	of	Land	Alfalfa hay		Reed
component name	map unit	capability	<u> </u>	alfalfa	canarygrass
ļ			Tons	AUM*	Tons
1187					
Dora, ponded	90	8w	İ	İ	i
Seelyeville, ponded	4	8w	İ	İ	İ
Wildwood	4	6w	İ	İ	İ
Boash	2	2w	į	į	į
1191			3.0	3.5	4.0
Sahkahtay	85	3w			
Cormant	5	4w		İ	İ
Deerwood	5	6w		İ	i
Karlstad	3	3s		İ	i
Redby	2	3w	İ	İ	i
1206			3.0	3.0	4.0
Cormant	55 l	4w	]	3.0	1
Redby	35	3w			
Hiwood	5	4s			
Leafriver	5	6w			
	-		i	İ	İ
1214	I		3.0	4.5	6.0
Mustinka	90	2w	!	!	İ
Espelie	4	2w			
Wildwood	4	6w			
Dalbo	2	1	İ		
1274B					
Redby	40	3w			
Hiwood	30	4s			
Leafriver, wooded	15	6w			
Clearriver	5	4s			
Cormant	5	4w			
Zimmerman	5	4s			
1298			3.0	4.5	5.5
Borup	90	2w		İ	İ
Augsburg, depressional	3	6w			
Glyndon	3	2s			
Sago	2	6w			
Skime	2	4s			
1302			4.5	5.5	
Foldahl	85	2s	İ	İ	İ
Kratka	10	3w			1
Foxhome	5	3s	ļ		
1304			4.0	6.0	
Glyndon	85	2s	i		i
Borup	10	2w	i	i	i
Skime	5	4s	į	į	į
1305			4.0	5.5	
Hilaire	85	2s			i
Espelie	11	2w	i	i	i
Grano	2	2 w	i	i	i
Redby	2	3w	İ	İ	İ
1314	ļ				5.5
Tacoosh	ا	6w			] 5.5
Rifle	90   8	6w	I	1	
Sax	2	6w	I	1	
Dan	4	ow	1	1	I

Table 8.--Land Capability and Yields per Acre of Pasture--Continued

Man gumbal and	Percent	I and	 	Promocrass	Pood
Map symbol and component name	of	Land capability	Alfalfa hay	Bromegrass-	Reed
component name	map unit	capability	l	<u>'</u>	canarygrass
l l			Tons	AUM*	Tons
1316			4.0	6.0	
Wheatville	85	2s	İ		İ
Augsburg	13	2w	į	į	İ
Grano	2	2w	İ	İ	İ
j	j		ĺ		Ì
1326					5.5
Augsburg, depressional	45	6w			
Wabanica, depressional	45	6w			
Sax	6	6w	!		!
Espelie	2	2w			
Zippel	2	2w			
1327B			3.5	4.5	
Karlstad	65	3s			ì
Marquette	25	4s	İ		i
Sahkahtay	7	3w	İ		i
Redby	3	3w	İ	İ	İ
į				1	
1328					5.5
Northwood, wooded	90	6w			
Berner, wooded	5	6w			
Grygla	5	4w			
1333			 		6.0
Dora, wooded	90	6w			0.0
Lupton	4	7w	i i		İ
Wildwood	4	6w	i i		İ
Auganaush	2	2w	İ	İ	
İ	j		ĺ	İ	Ì
1356.					
Water, miscellaneous					-
  1399B			3.0	3.5	
Two Inlets	85	4s	1	3.3	İ
Wurtsmith	6	4s	İ		i
Zimmerman	6	4s	İ		İ
Meehan	3	4w	İ	İ	İ
I					
1401					5.5
Grygla, depressional	90	6w			
Northwood, wooded	5	6w			
Chilgren	3 2	2w			
Grygla	4	4w	 	1	
1402					5.0
Leafriver, wooded	90	6w	İ		İ
Cormant	4	4w	İ	İ	İ
Tawas	4	6w	į	į	İ
Redby	2	3w	ĺ	İ	Ì
					_
1404	0.0				5.5
Berner, wooded	90	6w			-
Lupton	4	7w	I I		I
Northwood, wooded  Grygla	4 2	6w 4w	I I	I	I I
GT A G T A G T A G T A G T A G T A G T A G T A G T A G T A G T A G T A G T A G T A G T A G T A G T A G T A G T	∠	±W	I 	1	
   1405					6.0
			1	1	
Lallie	90	8w			
	90 7	8w 6w	 	 	

Table 8.--Land Capability and Yields per Acre of Pasture--Continued

Map symbol and component name	of map unit	Land capability	Alfalfa hay	Bromegrass-	Reed canarygrass
Component name	map unit	Capability	Tons	AUM*	Tons
İ	i				
1414	İ		4.5	6.0	
Nereson, very cobbly	85	3e			
Percy, very cobbly	10	3w	!		
Pelan	3	3 ន	!		
Foxhome	2	3s		 	
1428	į		4.0	5.0	j
Karlsruhe	85	4e			
Syrene	10	4w			
Ulen	5	3s	 	 	
1444			4.0	4.5	
Wurtsmith	85	4s	ĺ		İ
Meehan	10	4w	ĺ		İ
Clearriver	2	4s			
Two Inlets	2	4 s	1		
Cormant	1	4w			
1448	 		3.0	4.5	6.0
Grano	90	2w	i	i	İ
Percy	5	2w	i	İ	i
Augsburg	3	2w	İ	į	İ
Woodslake	2	3w	į	į	
1449	 		3.0	4.5	6.0
Grano	90	2w			
Percy	5	2w	i	İ	i
Augsburg	3	2w	İ	į	i
Woodslake	2	3w	į	į	į
1807			 		
Cathro, ponded	90	8w	i		1
Haug	4	6w	i	İ	i
Seelyeville, ponded	4	8w	İ	į	i
Percy	2	3w	į	į	
1808					
Markey, ponded	90	8w	i		i
Leafriver	4	6w	i	İ	i
Seelyeville, ponded	4	8w	İ	į	i
Cormant	2	4w	į	į	
1918			4.2	5.0	
Croke	85	1	i		i
Augsburg	13	2w	i	i	i
Grano	2	2w	į	į	į
1923B				5.0	
Garnes, very stony	85	2e	i		i
Chilgren	10	2w	i	i	i
Eckvoll	3	3s	i	İ	İ
Pelan	2	3s	į	į	į
1984	l i		 		5.0
Leafriver	90	6w	i		
Cormant	5	4w	i	i	i
Markey	3	6w	i	i	i
Redby	2	3w	į	į	į
W.					
Water	 				
	l I		I I	1	1

 $<sup>\</sup>star$  Animal unit month: The amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.

## Table 9.--Prime Farmland

(Only the soils considered prime farmland are listed. Urban or built-up areas of the soils listed are not considered prime farmland. If a soil is prime farmland only under certain conditions, the conditions are specified in parentheses after the soil name.)

Map symbol	Soil name
47	  Colvin silty clay loam, 0 to 2 percent slopes (where drained)
52	Augsburg loam, 0 to 2 percent slopes (where drained)
59	Grimstad fine sandy loam, 0 to 3 percent slopes
67	Bearden silt loam, 0 to 2 percent slopes
77	Garnes fine sandy loam, 0 to 3 percent slopes
133	Dalbo loam, 0 to 3 percent slopes
147	Spooner very fine sandy loam, 0 to 2 percent slopes (where drained)
167B	Baudette fine sandy loam, 1 to 6 percent slopes
383	Percy loam, 0 to 2 percent slopes (where drained)
404	Chilgren fine sandy loam, 0 to 2 percent slopes (where drained)
439	Strathcona fine sandy loam, 0 to 2 percent slopes (where drained)
481	Kratka fine sandy loam, 0 to 2 percent slopes (where drained)
568	Zippel very fine sandy loam, 0 to 2 percent slopes (where drained)
569	Wabanica silt loam, 0 to 2 percent slopes (where drained)
581	Percy fine sandy loam, 0 to 1 percent slopes (where drained)
582	Roliss loam, 0 to 2 percent slopes (where drained)
583	Nereson fine sandy loam, 0 to 3 percent slopes
643	Huot fine sandy loam, 0 to 3 percent slopes
644	Boash clay loam, 0 to 2 percent slopes (where drained)
645	Espelie fine sandy loam, 0 to 2 percent slopes (where drained)
651	Thiefriver fine sandy loam, 0 to 2 percent slopes (where drained)
737	Mahkonce fine sandy loam, 0 to 3 percent slopes
767	Auganaush loam, 0 to 2 percent slopes (where drained)
1134	Borup-Glyndon complex, 0 to 2 percent slopes (where drained)
1158	Skagen loam, 0 to 3 percent slopes
1182	Warroad fine sandy loam, 0 to 2 percent slopes (where drained)
1214	Mustinka clay loam, 0 to 1 percent slopes (where drained)
1298	Borup silt loam, 0 to 2 percent slopes (where drained)
1302	Foldahl fine sandy loam, 0 to 3 percent slopes
1304	Glyndon very fine sandy loam, 0 to 2 percent slopes
1305	Hilaire fine sandy loam, 0 to 3 percent slopes
1316	Wheatville loam, 0 to 2 percent slopes
1448	Grano clay, MAP 18-22, 0 to 2 percent slopes (where drained)
1449	Grano loam, MAP 18-22, 0 to 2 percent slopes (where drained)
1918	Croke very fine sandy loam, 0 to 2 percent slopes

Table 10.--Windbreaks and Environmental Plantings

(Absence of an entry indicates that trees generally do not grow to the given height.)

Map symbol and	Percent of	Trees having predicted 20-year average height, in feet, of					
component name	map unit	<8	8-15	16-25	26-35	>35	
47: Colvin	85	  Nanking cherry,   Peking cotoneaster,   redosier dogwood	American cranberrybush, American plum, common chokecherry, common lilac	  Black Hills spruce,   Manchurian   crabapple, white   spruce	  Golden willow,   Siberian elm 	   Imperial Carolina   poplar, eastern   cottonwood	
Bearden	5	  Peking cotoneaster,   sargent crabapple 	American   cranberrybush,   American plum,   common chokecherry,   common lilac,   silver buffaloberry	Siberian crabapple,   eastern redcedar,   Black Hills spruce,   Manchurian   crabapple, white   spruce	   Common hackberry,   golden willow,   green ash, Siberian   elm	Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood	
Grano	5	Honeysuckle,   redosier dogwood   	  Common chokecherry,   common lilac	   Bastern arborvitae,   Black Hills spruce,   Russian-olive,   white spruce	Golden willow,   Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood	
Sax	5	 		 	 		
48B: Hiwood	85	  Redosier dogwood,   sargent crabapple	  Common lilac, late   lilac, silver   buffaloberry	  Siberian crabapple,   Manchurian   crabapple, Russian-   olive	  Jack pine, eastern   white pine, green   ash, red pine,   Siberian elm	  Imperial Carolina   poplar, eastern   cottonwood	
Redby	7	   Peking cotoneaster,   redosier dogwood,   sargent crabapple	  American   cranberrybush,   American plum,   common lilac	  Blue spruce,   Russian-olive     	Norway spruce, common hackberry, jack pine, paper birch, green ash, red pine, Siberian elm	   Eastern cottonwood   Siouxland   cottonwood 	
Clearriver	3	  Peking cotoneaster,   honeysuckle   	Common lilac, late lilac, silver buffaloberry	  Eastern redcedar,   Manchurian   crabapple, Scotch   pine, ponderosa   pine, Russian-olive	  Jack pine, eastern   white pine, green   ash, Siberian elm 	  Silver maple,   eastern cottonwood   	

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and	Percent	Trees having predicted 20-year average height, in feet, of						
component name	map unit	<8	8-15	16-25	26-35	>35		
48B: Cormant	   3   	  Nanking cherry,   Peking cotoneaster,   redosier dogwood	American cranberrybush, American plum, common chokecherry, common lilac	  Blue spruce,   Manchurian   crabapple, black   ash, white spruce	    Golden willow, white   willow   	  Eastern cottonwood,  Siouxland  cottonwood		
Zimmerman	2       	  Redosier dogwood,   sargent crabapple   		  Siberian crabapple,   eastern redcedar,   Manchurian   crabapple, Russian-   olive	  Jack pine, paper   birch, eastern   white pine, green   ash, red pine,   Siberian elm	  Imperial Carolina   poplar, eastern   cottonwood 		
52: Augsburg	   85     	  Redosier dogwood,   sargent crabapple   	  Common chokecherry,   common lilac   	  Black Hills spruce,   Russian-olive,   white spruce	  Laurel willow,   golden willow,   Siberian elm, white   willow	Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood		
Croke	   5   	  Honeysuckle,   redosier dogwood   	   Cranberrybush,   Common lilac	   Eastern redcedar,   peashrub, Black   Hills spruce, bur   oak, white spruce	  Eastern white pine,   green ash 	Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood		
Grano	   5     	  Honeysuckle,   redosier dogwood   	  Common chokecherry,   common lilac   	  Black Hills spruce,   Russian-olive,   white spruce 	  Golden willow,   Siberian elm 	  Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood		
Sago	   5 	   		 	 	   		
59: Grimstad	   85     	  Nanking cherry,   redosier dogwood,   sargent crabapple 	  Common chokecherry,   common lilac   	  Blue spruce, eastern   redcedar, bur oak,   Russian-olive,   white spruce	  Golden willow,   Siberian elm 	  Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood		
Strathcona	   12     	  Redosier dogwood,   sargent crabapple   	  Common chokecherry,  common lilac 	  Blue spruce, eastern   arborvitae, eastern   redcedar, white   spruce 	  Golden willow, green   ash, Siberian elm   	  Imperial Carolina   poplar, eastern   cottonwood 		

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and	Percent of	Trees having predicted 20-year average height, in feet, of						
component name	map unit	<8	8-15	16-25	26-35	>35		
59: Foxhome	   3     	    Nanking cherry,   Peking cotoneaster   	Common chokecherry, common lilac, silver buffaloberry	  Siberian crabapple,   eastern redcedar,   ponderosa pine,   Manchurian   crabapple, bur oak,   Russian-olive	  Green ash, Siberian   elm   	  Silver maple,   imperial Carolina   poplar, eastern   cottonwood		
64: Ulen	   85     	  Nanking cherry,   sargent crabapple   	  Common chokecherry,   common lilac   	  Blue spruce, eastern   redcedar, bur oak,   Russian-olive,   white spruce	  Golden willow,   Siberian elm   	Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood		
Rosewood	   10   	  Redosier dogwood,   sargent crabapple 	Common chokecherry,   common lilac	Eastern arborvitae,   peashrub, Black   Hills spruce,   Russian-olive	  Golden willow,   Siberian elm, white   willow	Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood		
Redby	   3     	  Peking cotoneaster,   redosier dogwood,   sargent crabapple	   American   cranberrybush,   American plum,   common lilac	  Blue spruce,   Russian-olive     	Norway spruce,   common hackberry,   jack pine, paper   birch, green ash,   red pine, Siberian   elm	Eastern cottonwood,   Siouxland   cottonwood		
Rushlake	   2   	  Peking cotoneaster,   redosier dogwood   	American   cranberrybush,   common lilac	  Eastern redcedar,   bur oak, white   spruce	  Norway spruce, jack   pine, eastern white   pine, green ash,   red maple			
65: Foxhome	   85     	  Nanking cherry,   Peking cotoneaster   	  Common chokecherry,   common lilac,   silver buffaloberry	  Siberian crabapple,   eastern redcedar,   ponderosa pine,   Manchurian   crabapple, bur oak,   Russian-olive	  Green ash, Siberian   elm   	  Silver maple,   imperial Carolina   poplar, eastern   cottonwood		
Strandquist	   12       	  Redosier dogwood,   sargent crabapple   	Common chokecherry, common lilac	American   mountainash, Black   Hills spruce, bur   oak, Russian-olive,   white spruce	  Golden willow,   Siberian elm   	   Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood		

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and	Percent of	Trees having predicted 20-year average height, in feet, of						
component name	map unit	<8	8-15	16-25	26-35	>35		
65: Skagen	3	  Nanking cherry,   sargent crabapple   	American plum,   common chokecherry,   common lilac	    Scotch pine, bur   oak, Russian-olive     	Common hackberry, laurel willow, green ash	   Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood		
67:			j	j		İ		
Bearden	85   	Peking cotoneaster,   sargent crabapple    -	American   cranberrybush,   American plum,   common chokecherry,   common lilac,   silver buffaloberry	eastern redcedar, Black Hills spruce, Manchurian crabapple, white	Common hackberry,   golden willow,   green ash, Siberian   elm	Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood		
Colvin	15	  Nanking cherry,   Peking cotoneaster,   redosier dogwood 	American   cranberrybush,   American plum,   common chokecherry,   common lilac	   Black Hills spruce,   Manchurian   crabapple, white   spruce	  Golden willow,   Siberian elm 	Imperial Carolina   poplar, eastern   cottonwood		
77:		 	 	 	 	 		
Garnes	85	Peking cotoneaster,   redosier dogwood,   sargent crabapple	American   cranberrybush,   American plum,   common lilac	Blue spruce, eastern   arborvitae, eastern   redcedar, bur oak,   white spruce	Norway spruce, paper   birch, eastern   white pine, green   ash, red pine	Eastern cottonwood   Siouxland   cottonwood 		
Chilgren	10	Nanking cherry,   Peking cotoneaster,   common ninebark,   redosier dogwood	  American   cranberrybush,   common lilac	Eastern arborvitae,   black ash, white   spruce	Paper birch, green ash, white willow	Silver maple,   eastern cottonwood		
Eckvoll	3	  Peking cotoneaster,   redosier dogwood   	  American plum,   common chokecherry     	Blue spruce, eastern   redcedar,   Manchurian   crabapple, Scotch   pine, bur oak,   white spruce	American basswood,   eastern white pine,   golden willow 	  Silver maple,   eastern cottonwood   		
Pelan	2	  Peking cotoneaster,   redosier dogwood   	American plum,   common chokecherry,   hedge cotoneaster,   common lilac,   silver buffaloberry	crabapple, bur oak,	  Green ash, Siberian   elm   	  Silver maple,   imperial Carolina   poplar, eastern   cottonwood		

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and	Percent of	Trees having predicted 20-year average height, in feet, of					
component name	map unit	<8	8-15	16-25	26-35	>35	
111: 	90	  Common ninebark,   honeysuckle,   redosier dogwood	    Common chokecherry,   common lilac	  Eastern arborvitae,  Black Hills spruce,  Russian-olive	  Golden willow,   Siberian elm, white   willow	Imperial Carolina   poplar, eastern   cottonwood	
Deerwood	5						
Rushlake	3	  Peking cotoneaster,   redosier dogwood   	American   cranberrybush,   common lilac	  Eastern redcedar,   bur oak, white   spruce	  Norway spruce, jack   pine, eastern white   pine, green ash,   red maple	  Silver maple,   eastern cottonwood,  Siouxland   cottonwood	
Rosewood	2	  Redosier dogwood,   sargent crabapple   		   Eastern arborvitae,   peashrub, Black   Hills spruce,   Russian-olive	  Golden willow,   Siberian elm, white   willow 	   Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood	
116: Redby	85	  Peking cotoneaster,   redosier dogwood,   sargent crabapple	American   cranberrybush,   American plum,   common lilac	  Blue spruce,   Russian-olive     	Norway spruce,   common hackberry,   jack pine, paper   birch, green ash,   red pine, Siberian   elm	Eastern cottonwood,   Siouxland   cottonwood	
Cormant	8	   Nanking cherry,   Peking cotoneaster,   redosier dogwood	American cranberrybush, American plum, common chokecherry, common lilac	Blue spruce,   Manchurian   crabapple, black   ash, white spruce	  Golden willow, white   willow 	Eastern cottonwood,   Siouxland   cottonwood	
Hiwood	6	  Redosier dogwood,   sargent crabapple   	  Common lilac, late   lilac, silver   buffaloberry	  Siberian crabapple,   Manchurian   crabapple, Russian-   olive	Jack pine, eastern white pine, green ash, red pine, Siberian elm	  Imperial Carolina   poplar, eastern   cottonwood	
Leafriver	1	   	   	   	   	   	
117:  Cormant	85	  Nanking cherry,   Peking cotoneaster,   redosier dogwood 	American cranberrybush, American plum, common chokecherry, common lilac	  Blue spruce,   Manchurian   crabapple, black   ash, white spruce	  Golden willow, white   willow   	  Eastern cottonwood,   Siouxland   cottonwood	
  Leafriver  	7	   	   	   	   	   	

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and	Percent	Trees having predicted 20-year average height, in feet, of					
component name	map unit	<8	8-15	16-25	26-35	>35	
117: Epoufette	3	  Common ninebark,   redosier dogwood   	  American plum,   common lilac   	  Blue spruce, eastern   arborvitae,   Manchurian   crabapple, black   ash	    Golden willow, green   ash, white willow   	  Silver maple,   eastern cottonwood   	
Redby	3	   Peking cotoneaster,   redosier dogwood,   sargent crabapple 	American   cranberrybush,   American plum,   common lilac	  Blue spruce,   Russian-olive   	Norway spruce,   common hackberry,   jack pine, paper   birch, green ash,   red pine, Siberian   elm	Eastern cottonwood,   Siouxland   cottonwood	
Grygla, depressional	2	 	 	 	 	 	
133: Dalbo	85	  Peking cotoneaster,   redosier dogwood   	American   cranberrybush,   eastern arborvitae,   hedge cotoneaster,   common lilac	Amur maple, Manchurian crabapple, bur oak, white spruce	  Eastern white pine,   green ash 	  Silver maple,   imperial Carolina   poplar, eastern   cottonwood	
Mustinka	10	  Nanking cherry,   redosier dogwood     	American plum,   common chokecherry	Siberian crabapple,   eastern arborvitae,   peashrub, Black   Hills spruce,   Manchurian   crabapple, Russian-   olive	  Golden willow, green   ash, Siberian elm   	  Imperial Carolina   poplar, eastern   cottonwood 	
Moranville	5   	  Peking cotoneaster,   redosier dogwood   		Amur maple, Black   Hills spruce,   Scotch pine, bur   oak, white spruce	  Norway spruce, paper   birch, eastern   white pine, red   pine	  Silver maple,   eastern cottonwood 	
145: Enstrom	85	  Peking cotoneaster,   redosier dogwood   	American cranberrybush, American plum, common chokecherry	  Blue spruce, eastern   redcedar,   Manchurian   crabapple, bur oak,   white spruce	birch, golden   willow	  Eastern cottonwood,   Siouxland   cottonwood	
Grygla	10 	   Nanking cherry,   Peking cotoneaster,   common ninebark,   redosier dogwood	American cranberrybush, common lilac	  Eastern arborvitae,   Black Hills spruce,   black ash, white   spruce	  Paper birch, green   ash   	  Silver maple,   Siouxland   cottonwood	

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and	Percent		Trees having predic	ted 20-year average h	eight, in feet, of	
component name	map unit	<8	8-15	16-25	26-35	>35
145: Redby	   <b>4</b>       	  Peking cotoneaster,   redosier dogwood,   sargent crabapple	  American   cranberrybush,   American plum,   common lilac	  Blue spruce,   Russian-olive   	Norway spruce,   common hackberry,   jack pine, paper   birch, green ash,   red pine, Siberian   elm	  Eastern cottonwood,  Siouxland  cottonwood
Pelan	   1     	  Peking cotoneaster,   redosier dogwood   	American plum,   common chokecherry,   hedge cotoneaster,   common lilac,   silver buffaloberry	crabapple, bur oak,	  Green ash, Siberian   elm   	  Silver maple,   imperial Carolina   poplar, eastern   cottonwood
147:						
Spooner	85   	Nanking cherry,   Peking cotoneaster,   redosier dogwood	American   cranberrybush,   common lilac	Blue spruce, eastern   arborvitae, black   ash, white spruce	Norway spruce,   golden willow,   green ash	Silver maple,   Siouxland   cottonwood
Baudette	5         	Nanking cherry,   Peking cotoneaster,   redosier dogwood 	American   cranberrybush,   common lilac	Amur maple, blue   spruce, eastern   arborvitae,   Manchurian   crabapple, Scotch   pine, bur oak,   white spruce	Eastern white pine, green ash, red pine	Eastern cottonwood,   Siouxland   cottonwood 
Grygla	   5   		  American   cranberrybush,   common lilac	  Eastern arborvitae,   Black Hills spruce,   black ash, white   spruce	  Paper birch, green   ash 	  Silver maple,   Siouxland   cottonwood
Sago	   5 			 	 !	
158B: Zimmerman	   85     	  Redosier dogwood,   sargent crabapple   	  Common chokecherry,   common lilac   	  Siberian crabapple,   eastern redcedar,   Manchurian   crabapple, Russian-   olive	Jack pine, paper birch, eastern white pine, green ash, red pine, Siberian elm	  Imperial Carolina   poplar, eastern   cottonwood
Hiwood	   6     	  Redosier dogwood,   sargent crabapple   	  Common lilac, late   lilac, silver   buffaloberry 	  Siberian crabapple,   Manchurian   crabapple, Russian-   olive	  Jack pine, eastern   white pine, green   ash, red pine,   Siberian elm	  Imperial Carolina   poplar, eastern   cottonwood 

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and	Percent of	Trees having predicted 20-year average height, in feet, of					
component name	map unit	<8	8-15	16-25	26-35	>35	
158B: Two Inlets	6	  Peking cotoneaster,   honeysuckle 	    Common lilac, silver   buffaloberry   	  Blue spruce, eastern   redcedar, bur oak   	Jack pine, eastern   white pine, green   ash, red pine,   Siberian elm	  Eastern cottonwood,   Siouxland   cottonwood	
Redby	3	   Peking cotoneaster,   redosier dogwood,   sargent crabapple 	   American   cranberrybush,   American plum,   common lilac	  Blue spruce,   Russian-olive   	Norway spruce,   common hackberry,   jack pine, paper   birch, green ash,   red pine, Siberian   elm	  Eastern cottonwood,   Siouxland   cottonwood	
167B: Baudette	85	  Nanking cherry,   Peking cotoneaster,   redosier dogwood 	  American   cranberrybush,   common lilac 	Amur maple, blue spruce, eastern arborvitae, Manchurian crabapple, Scotch pine, bur oak, white spruce	  Eastern white pine,   green ash, red pine     	•	
Spooner	10	  Nanking cherry,   Peking cotoneaster,   redosier dogwood	  American   cranberrybush,   common lilac	  Blue spruce, eastern   arborvitae, black   ash, white spruce	  Norway spruce,   golden willow,   green ash	Silver maple,   Siouxland   cottonwood	
Moranville	5   5	  Peking cotoneaster,   redosier dogwood 		Amur maple, Black Hills spruce, Scotch pine, bur oak, white spruce	  Norway spruce, paper   birch, eastern   white pine, red   pine	  Silver maple,   eastern cottonwood   	
187:							
Haug	90	 		 	 	 	
Percy	5	Redosier dogwood,   sargent crabapple     	Common chokecherry,   common lilac   	Blue spruce, Black   Hills spruce, bur   cak, Russian-olive,   white spruce 	Golden willow,   Siberian elm   	Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood	
Cathro	3						
Boash	2	  Nanking cherry,   Peking cotoneaster,   redosier dogwood 	American plum,   common chokecherry,   common lilac	  Eastern arborvitae,   Manchurian   crabapple, European   larch	  Siberian elm, white   willow   	  Silver maple,   imperial Carolina   poplar, eastern   cottonwood	

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and	Percent   of	Trees having predicted 20-year average height, in feet, of					
component name	map unit	<8	8-15	16-25	26-35	>35	
191: Epoufette	   85     	  Common ninebark,   redosier dogwood   	  American plum,   common lilac   	  Blue spruce, eastern   arborvitae,   Manchurian   crabapple, black   ash	  Golden willow, green   ash, white willow   	  Silver maple,   eastern cottonwood 	
Cormant	   5     	  Nanking cherry,   Peking cotoneaster,   redosier dogwood 	American   cranberrybush,   American plum,   common chokecherry,   common lilac	   Blue spruce,   Manchurian   crabapple, black   ash, white spruce	  Golden willow, white   willow 	Eastern cottonwood, Siouxland cottonwood	
Leafriver	   5						
Meehan	   5     	  Nanking cherry,   Peking cotoneaster,   redosier dogwood   	  American plum,   common lilac     	  Blue spruce, eastern   redcedar, Scotch   pine, white spruce   	   Norway spruce, jack   pine, eastern white   pine, green ash,   red pine, Siberian   elm	· -	
202: Meehan	   85     	   Nanking cherry,   Peking cotoneaster,   redosier dogwood 	  American plum,   common lilac   	Blue spruce, eastern   redcedar, Scotch   pine, white spruce	Norway spruce, jack pine, eastern white pine, green ash, red pine, Siberian elm		
Cormant	   8     	  Nanking cherry,   Peking cotoneaster,   redosier dogwood 	American   cranberrybush,   American plum,   common chokecherry,   common lilac	  Blue spruce,   Manchurian   crabapple, black   ash, white spruce	  Golden willow, white   willow 	Eastern cottonwood, Siouxland cottonwood	
Wurtsmith	   5     	  Redosier dogwood,   sargent crabapple   	  American plum,   common lilac   	  Siberian crabapple,   eastern redcedar,   Manchurian   crabapple	Jack pine, paper   birch, eastern   white pine, green   ash, red pine,   Siberian elm	Eastern cottonwood, Siouxland cottonwood	
Leafriver	   2	 			 	 	
205: Karlstad	     85     	  Nanking cherry,   Peking cotoneaster   	  Common chokecherry,   common lilac   	  Blue spruce, eastern   redcedar, bur oak,   Russian-olive,   white spruce	  Golden willow,   Siberian elm   	  Eastern cottonwood,   Siouxland   cottonwood	

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and	Percent   of	Trees having predicted 20-year average height, in feet, of						
component name	map unit	<8	8-15	16-25	26-35	>35		
205: Sahkahtay	     7 	    Honeysuckle,   redosier dogwood   	  American plum,   common chokecherry,   common lilac		  Common hackberry,   paper birch, golden   willow, green ash	    Silver maple,   eastern cottonwood   		
Marquette	   5 	  Golden currant,   sargent crabapple 	Common chokecherry,   common lilac,   silver buffaloberry	  Blue spruce, eastern   redcedar, bur oak,   Russian-olive	  Jack pine, green   ash, red pine,   Siberian elm	  Imperial Carolina   poplar, eastern   cottonwood		
Redby	2       	   Peking cotoneaster,   redosier dogwood,   sargent crabapple	   American   cranberrybush,   American plum,   common lilac	  Blue spruce,   Russian-olive     	Norway spruce,   common hackberry,   jack pine, paper   birch, green ash,   red pine, Siberian   elm	   Eastern cottonwood,   Siouxland   cottonwood 		
Pits, gravel	   1 	   	   	   	   	   		
242B:		İ	İ	İ	İ	İ		
Marquette	85   	Golden currant,   sargent crabapple 	Common chokecherry,   common lilac,   silver buffaloberry	Blue spruce, eastern   redcedar, bur oak,   Russian-olive	Jack pine, green   ash, red pine,   Siberian elm	Imperial Carolina   poplar, eastern   cottonwood		
Karlstad	   14   	  Nanking cherry,   Peking cotoneaster 		  Blue spruce, eastern   redcedar, bur oak,   Russian-olive,   white spruce	  Golden willow,   Siberian elm 	Eastern cottonwood,   Siouxland   cottonwood		
Pits, gravel	   1 	   	   	   	   	   		
280: Pelan	   85     	  Peking cotoneaster,   redosier dogwood   	American plum, common chokecherry, hedge cotoneaster, common lilac, silver buffaloberry	  Ponderosa pine,   Manchurian   crabapple, bur oak,   Russian-olive	  Green ash, Siberian   elm   	  Silver maple,   imperial Carolina   poplar, eastern   cottonwood		
Strandquist	   10     	  Redosier dogwood,   sargent crabapple   		American   mountainash, Black   Hills spruce, bur   oak, Russian-olive,   white spruce	  Golden willow,   Siberian elm   	  Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood		

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and	Percent   of	Trees having predicted 20-year average height, in feet, of						
component name	map unit	<8	8-15	16-25	26-35	>35		
280: Garnes	   3 	  Peking cotoneaster,   redosier dogwood,   sargent crabapple	  American   cranberrybush,   American plum,   common lilac	  Blue spruce, eastern   arborvitae, eastern   redcedar, bur oak,   white spruce	  Norway spruce, paper   birch, eastern   white pine, green   ash, red pine	  Eastern cottonwood,  Siouxland  cottonwood		
Marquette	   1 	  Golden currant,   sargent crabapple 	  Common chokecherry,   common lilac,   silver buffaloberry	  Blue spruce, eastern   redcedar, bur oak,   Russian-olive	  Jack pine, green   ash, red pine,   Siberian elm	  Imperial Carolina   poplar, eastern   cottonwood		
Pits, gravel	   1							
379: Percy, very cobbly	   90     	  Redosier dogwood,   sargent crabapple   	  Common chokecherry,   common lilac   	  Blue spruce, Black   Hills spruce, bur   oak, Russian-olive,   white spruce	  Golden willow,   Siberian elm   	  Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood		
Boash	3	  Nanking cherry,   Peking cotoneaster,   redosier dogwood	American plum,   common chokecherry,   common lilac	Eastern arborvitae,   Manchurian   crabapple, European   larch	willow	Silver maple,   imperial Carolina   poplar, eastern   cottonwood		
Strandquist	   3     	  Redosier dogwood,   sargent crabapple   	  Common chokecherry,   common lilac   	American   mountainash, Black   Hills spruce, bur   oak, Russian-olive,   white spruce	  Golden willow,   Siberian elm   	Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood		
Haug	2							
Skagen, very cobbly	   2     	  Nanking cherry,   sargent crabapple     	  American plum,   common chokecherry,   common lilac 	  Scotch pine, bur   oak, Russian-olive     	Common hackberry, laurel willow, green ash	  Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood		
383: Percy	   90     	  Redosier dogwood,   sargent crabapple   	  Common chokecherry,   common lilac   	  Blue spruce, Black   Hills spruce, bur   oak, Russian-olive,   white spruce	  Golden willow,   Siberian elm 	  Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood		

	Percent		Trees having predic	ted 20-year average h	eight, in feet, of			
Map symbol and	of	 						
component name	map unit	<8	8-15	16-25	26-35	>35		
383:			 	 				
Boash	3     	Nanking cherry,   Peking cotoneaster,   redosier dogwood 	American plum,   common chokecherry,   common lilac 		Siberian elm, white   willow   	Silver maple,   imperial Carolina   poplar, eastern   cottonwood		
Strandquist	3       	Redosier dogwood,   sargent crabapple	Common chokecherry,   common lilac 	American   mountainash, Black   Hills spruce, bur   oak, Russian-olive,   white spruce	Golden willow,   Siberian elm	Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood		
Haug	   2 	 	 !		 !			
Skagen	2       	  Nanking cherry,   sargent crabapple   	American plum,   common chokecherry,   common lilac	  Scotch pine, bur   oak, Russian-olive     	   Common hackberry,   laurel willow,   green ash	  Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood		
384: Percy, depressional	   85	 	 	 	 	 		
reicy, depressional	65	 	 	 	 			
Haug	,   7 			 				
Percy	5       	Redosier dogwood,   sargent crabapple   	Common chokecherry,   common lilac   	Blue spruce, Black   Hills spruce, bur   oak, Russian-olive,   white spruce	Golden willow,   Siberian elm   	Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood		
Boash	   3   	  Nanking cherry,   Peking cotoneaster,   redosier dogwood 	  American plum,   common chokecherry,   common lilac 	  Eastern arborvitae,   Manchurian   crabapple, European   larch	  Siberian elm, white   willow 	  Silver maple,   imperial Carolina   poplar, eastern   cottonwood		
387:	İ		İ					
Roliss, depressional	85 	 	 	 I	 	i		
Haug	   10 	i I	i	i	 	i		
Roliss	5     	Redosier dogwood,   sargent crabapple   	Common chokecherry,   common lilac   	Eastern arborvitae,   Black Hills spruce,   bur oak, Russian-   olive, white spruce	Siberian elm	Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood		

Table 10.--Windbreaks and Environmental Plantings--Continued

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and	Percent   of	Trees having predicted 20-year average height, in feet, of						
component name	map unit	<8	8-15	16-25	26-35	>35		
404: Chilgren	     85   	  Nanking cherry,   Peking cotoneaster,   common ninebark,   redosier dogwood	  American   cranberrybush,   common lilac	  Eastern arborvitae,   black ash, white   spruce	  Paper birch, green   ash, white willow 	    Silver maple,   eastern cottonwood 		
Garnes	   5   	   Peking cotoneaster,   redosier dogwood,   sargent crabapple	American   cranberrybush,   American plum,   common lilac	Blue spruce, eastern   arborvitae, eastern   redcedar, bur oak,   white spruce	Norway spruce, paper   birch, eastern   white pine, green   ash, red pine	  Eastern cottonwood,   Siouxland   cottonwood		
Grygla	   5   	  Nanking cherry,   Peking cotoneaster,   common ninebark,   redosier dogwood	American   cranberrybush,   common lilac	  Eastern arborvitae,   Black Hills spruce,   black ash, white   spruce	  Paper birch, green   ash 	  Silver maple,   Siouxland   cottonwood		
Haug	5							
412: Mavie	   85     	  Redosier dogwood,   sargent crabapple   	  Common chokecherry,   common lilac   	American   mountainash, Black   Hills spruce, bur   oak, Russian-olive,   white spruce	  Golden willow,   Siberian elm 	  Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood		
Foxhome	   5     	   Nanking cherry,   Peking cotoneaster     	  Common chokecherry,   common lilac,   silver buffaloberry 	  Siberian crabapple,   eastern redcedar,   ponderosa pine,   Manchurian   crabapple, bur oak,   Russian-olive	  Green ash, Siberian   elm   	  Silver maple,   imperial Carolina   poplar, eastern   cottonwood		
Northwood	   5							
Percy, very cobbly	   5     	  Redosier dogwood,   sargent crabapple   	  Common chokecherry,   common lilac   	Blue spruce, Black   Hills spruce, bur   oak, Russian-olive,   white spruce	  Golden willow,   Siberian elm   	Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood		
432: Strandquist	   85     	  Redosier dogwood,   sargent crabapple   	  Common chokecherry,   common lilac   	American   mountainash, Black   Hills spruce, bur   cak, Russian-olive,   white spruce	  Golden willow,   Siberian elm   	  Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood		

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and	Percent of	Trees having predicted 20-year average height, in feet, of						
component name	map unit	<8	8-15	16-25	26-35	>35		
432: Percy, very cobbly	5	  Redosier dogwood,   sargent crabapple   	  Common chokecherry,  common lilac 	   Blue spruce, Black   Hills spruce, bur   cak, Russian-olive,   white spruce	  Golden willow,   Siberian elm 	Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood		
Haug	   4	 	 	 	 	 		
Boash	3	  Nanking cherry,   Peking cotoneaster,   redosier dogwood	  American plum,   common chokecherry,   common lilac		willow	  Silver maple,   imperial Carolina   poplar, eastern   cottonwood		
Foxhome	3	Nanking cherry,   Peking cotoneaster     	Common chokecherry,   common lilac,   silver buffaloberry 	eastern redcedar,	Green ash, Siberian   elm   	Silver maple,   imperial Carolina   poplar, eastern   cottonwood		
433:			 	 		 		
Syrene, depressional	85							
Deerwood	5			 				
Rosewood	5	  Redosier dogwood,   sargent crabapple   	  Common chokecherry,   common lilac 	   Eastern arborvitae,   peashrub, Black   Hills spruce,   Russian-olive	  Golden willow,   Siberian elm, white   willow 	Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood		
Syrene	5	  Redosier dogwood,   sargent crabapple     	  Common chokecherry,   common lilac   	  Eastern redcedar,   Black Hills spruce,   bur oak, Russian-   olive, white spruce	İ	  Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood		
435: Syrene	85	  Redosier dogwood,   sargent crabapple   	  Common chokecherry,   common lilac   	  Eastern redcedar,   Black Hills spruce,   bur oak, Russian-   olive, white spruce	  Golden willow,   Siberian elm 	  Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood		

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and	Percent of	Trees having predicted 20-year average height, in feet, of						
component name	map unit	<8	8-15	16-25	26-35	>35		
435: Rosewood	5	  Redosier dogwood,   sargent crabapple 	  Common chokecherry,  common lilac 	  Eastern arborvitae,   peashrub, Black   Hills spruce,   Russian-olive	    Golden willow,   Siberian elm, white   willow 	Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood		
Syrene, depressional	   5	   	 	 	 	 		
Karlsruhe	3	Nanking cherry, Peking cotoneaster, common chokecherry, redosier dogwood	American   cranberrybush,   American plum 	Eastern redcedar,   ponderosa pine,   Black Hills spruce,   bur oak	Common hackberry,   laurel willow,   golden willow,   green ash	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood		
Deerwood	2	 						
439:			İ	İ	İ			
Strathcona	85   	Redosier dogwood,   sargent crabapple 	Common chokecherry,   common lilac 	Blue spruce, eastern   arborvitae, eastern   redcedar, white   spruce	Golden willow, green   ash, Siberian elm 	Imperial Carolina   poplar, eastern   cottonwood		
Northwood	5   5	   	   	   	   	   		
Percy	5	Redosier dogwood,   sargent crabapple	Common chokecherry,   common lilac	Blue spruce, Black   Hills spruce, bur   oak, Russian-olive,   white spruce	Golden willow,   Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood		
Grimstad	3	Nanking cherry,   redosier dogwood,   sargent crabapple	Common chokecherry,   common lilac	  Blue spruce, eastern   redcedar, bur oak,   Russian-olive,   white spruce	  Golden willow,   Siberian elm 	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood		
Strandquist	2	  Redosier dogwood,   sargent crabapple   	Common chokecherry, common lilac	American   mountainash, Black   Hills spruce, bur   oak, Russian-olive,   white spruce	  Golden willow,   Siberian elm   	Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood		

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and	Percent of	Trees having predicted 20-year average height, in feet, of						
component name	map unit	<8	8-15	16-25	26-35	>35		
481:     Kratka      	85	  Nanking cherry,   Peking cotoneaster   	  Common chokecherry,   common lilac   	  Blue spruce, eastern   redcedar, bur oak,   Russian-olive,   white spruce	  Golden willow,   Siberian elm   			
Northwood	5							
Percy	5	  Redosier dogwood,   sargent crabapple   		Blue spruce, Black   Hills spruce, bur   oak, Russian-olive,   white spruce	  Golden willow,   Siberian elm   	Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood		
Enstrom	3	  Peking cotoneaster,   redosier dogwood   	American   cranberrybush,   American plum,   common chokecherry	Blue spruce, eastern   redcedar,   Manchurian   crabapple, bur oak,   white spruce	birch, golden   willow	Eastern cottonwood,   Siouxland   cottonwood		
Strandquist	2	  Redosier dogwood,   sargent crabapple   	  Common chokecherry,   common lilac	American   mountainash, Black   Hills spruce, bur   oak, Russian-olive,   white spruce	  Golden willow,   Siberian elm   	Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood		
482:		 			 			
Grygla	85	Nanking cherry,   Peking cotoneaster,   common ninebark,   redosier dogwood	American   cranberrybush,   common lilac	Eastern arborvitae,   Black Hills spruce,   black ash, white   spruce		Silver maple,   Siouxland   cottonwood		
Chilgren	5	Nanking cherry,   Peking cotoneaster,   common ninebark,   redosier dogwood	American   cranberrybush,   common lilac	Eastern arborvitae,   black ash, white   spruce	Paper birch, green   ash, white willow 	Silver maple,   eastern cottonwood		
Grygla, depressional	5							
Enstrom	3	  Peking cotoneaster,   redosier dogwood   	American   cranberrybush,   American plum,   common chokecherry	Blue spruce, eastern   redcedar,   Manchurian   crabapple, bur oak,   white spruce	  Jack pine, paper   birch, golden   willow 	Eastern cottonwood,   Siouxland   cottonwood		
Northwood	2							

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and	Percent	Trees having predicted 20-year average height, in feet, of						
component name	map unit	<8	8-15	16-25	26-35	>35		
532:     Sago	90	 	 	 	 	 		
Cathro	5							
Zippel      	5	  Redosier dogwood,   sargent crabapple   	  American plum,   common chokecherry,   common lilac	  Eastern arborvitae,   Black Hills spruce,   white spruce	  Common hackberry,   golden willow,   green ash	  Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood		
534:								
Mooselake	90							
Bullwinkle	4	 	 	 	   			
Dora	3							
Tawas	3	 	 	 	 	 		
540:     Seelyeville	90	   			 	 		
Cathro	4							
   Dora	3	 	 	 	 	 		
Markey	3							
541:     Rifle	90	   	   	   	   	   		
Tacoosh	10							
543:     Markey	90	 	 	 	 	 		
Cormant	5	  Nanking cherry,   Peking cotoneaster,   redosier dogwood	American   cranberrybush,   American plum,   common chokecherry,   common lilac	  Blue spruce,   Manchurian   crabapple, black   ash, white spruce	Golden willow, white   willow 	   Eastern cottonwood,   Siouxland   cottonwood		
Seelyeville	5	 	 	 	 	 		

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and	Percent of	Trees having predicted 20-year average height, in feet, of						
component name	map unit	<8	8-15	16-25	26-35	>35		
544:	 	 	 		 	 		
Cathro	90							
Percy, very cobbly	<b>4</b>       	  Redosier dogwood,   sargent crabapple   		Blue spruce, Black   Hills spruce, bur   oak, Russian-olive,   white spruce	  Golden willow,   Siberian elm   	  Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood		
Grygla	   3   	  Nanking cherry,   Peking cotoneaster,   common ninebark,   redosier dogwood	American   cranberrybush,   common lilac	Eastern arborvitae,   Black Hills spruce,   black ash, white   spruce	  Paper birch, green   ash   	  Silver maple,   Siouxland   cottonwood 		
Seelyeville	3							
546: Lupton	     90							
Bullwinkle	   4							
Dora	   3					 		
Tawas	   3					 		
547: Deerwood	     90	 			 			
Markey	   4							
Rosewood	   3   	  Redosier dogwood,   sargent crabapple   		Eastern arborvitae,   peashrub, Black   Hills spruce,   Russian-olive	  Golden willow,   Siberian elm, white   willow 	Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood		
Syrene	   3     	  Redosier dogwood,   sargent crabapple   		Eastern redcedar,   Black Hills spruce,   bur oak, Russian-   olive, white spruce	  Golden willow,   Siberian elm   	  Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood		

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and	Percent of	Trees having predicted 20-year average height, in feet, of						
component name	map unit	<8	8-15	16-25	26-35	>35		
550:			 	 				
Dora	90							
Boash	4	  Nanking cherry,   Peking cotoneaster,   redosier dogwood 	  American plum,   common chokecherry,   common lilac 	·	  Siberian elm, white   willow 	  Silver maple,   imperial Carolina   poplar, eastern   cottonwood		
Seelyeville	3							
Woodslake	3	 	   	 	 	 		
561: Bullwinkle	90							
Lupton	4	 	 	 	 	 		
Northwood, wooded	4	 	 	 	 	 		
Chilgren	2	Nanking cherry,   Peking cotoneaster,   common ninebark,   redosier dogwood	  American   cranberrybush,   common lilac	  Eastern arborvitae,   black ash, white   spruce	  Paper birch, green   ash, white willow 	  Silver maple,   eastern cottonwood 		
563: Northwood	90			 	 	 		
Grygla	4	  Nanking cherry,   Peking cotoneaster,   common ninebark,   redosier dogwood	  American   cranberrybush,   common lilac 	  Eastern arborvitae,   Black Hills spruce,   black ash, white   spruce		  Silver maple,   Siouxland   cottonwood 		
Berner	3							
Strandquist	3	  Redosier dogwood,   sargent crabapple   		American   mountainash, Black   Hills spruce, bur   oak, Russian-olive,   white spruce	  Golden willow,   Siberian elm 	Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood		
565: Eckvoll	85	  Peking cotoneaster,   redosier dogwood   	  American plum,   common chokecherry   	  Blue spruce, eastern   redcedar,   Manchurian   crabapple, Scotch   pine, bur oak,   white spruce	  American basswood,   eastern white pine,   golden willow 	  Silver maple,   eastern cottonwood   		

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and	Percent	Trees having predicted 20-year average height, in feet, of						
component name	map unit	<8	8-15	16-25	26-35	>35		
565:   Chilgren  	5	  Nanking cherry,  Peking cotoneaster,  common ninebark,  redosier dogwood	  American   cranberrybush,   common lilac	  Eastern arborvitae,   black ash, white   spruce	  Paper birch, green   ash, white willow 	  Silver maple,   eastern cottonwood		
   Grygla    	5		   American   cranberrybush,   common lilac	  Eastern arborvitae,   Black Hills spruce,   black ash, white   spruce	  Paper birch, green   ash 	Silver maple, Siouxland cottonwood		
Hiwood    	5	  Redosier dogwood,   sargent crabapple   	  Common lilac, late   lilac, silver   buffaloberry	  Siberian crabapple,   Manchurian   crabapple, Russian-   olive	Jack pine, eastern   white pine, green   ash, red pine,   Siberian elm	Imperial Carolina   poplar, eastern   cottonwood		
568: Zippel  	85	    Redosier dogwood,   sargent crabapple     	  American plum,   common chokecherry,   common lilac	  Eastern arborvitae,   Black Hills spruce,   white spruce	  Common hackberry,   golden willow,   green ash	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood		
Augsburg, depressional	5		 		 	 		
Sago	5							
	5	  Peking cotoneaster,   sargent crabapple   		Black Hills spruce,   Siberian crabapple,   Manchurian   crabapple, Scotch   pine, Russian-   olive, white spruce	white pine, green   ash, Siberian elm 	Eastern cottonwood, Siouxland cottonwood		
569:			 		 			
Wabanica        	85	Honeysuckle,   redosier dogwood     	Common chokecherry,   common lilac   	Peashrub, Black   Hills spruce,   Manchurian   crabapple, black   ash, Russian-olive	Golden willow,   Siberian elm, white   willow 	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood		
Warroad	6	  Nanking cherry,   redosier dogwood 	American   cranberrybush,   common lilac	  Eastern arborvitae,   peashrub, Black   Hills spruce, black   ash, white spruce	  Common hackberry,   golden willow,   green ash	   Silver maple,   eastern cottonwood,   Siouxland   cottonwood		
   Sax	4	 		 	 	 		

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and	Percent of	Trees having predicted 20-year average height, in feet, of						
component name	map unit	<8	8-15	16-25	26-35	>35		
569:   Grano      	3	  Honeysuckle,   redosier dogwood     	  Common chokecherry,   common lilac   	  Black Hills spruce,   Russian-olive,   white spruce 	  Golden willow,   Siberian elm   	  Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood		
Enstrom	2	  Peking cotoneaster,   redosier dogwood   	American   cranberrybush,   American plum,   common chokecherry	  Blue spruce, eastern   redcedar,   Manchurian   crabapple, bur oak,   white spruce	birch, golden   willow	  Eastern cottonwood,   Siouxland   cottonwood		
570:			 			 		
Faunce        	85	Honeysuckle, sargent   crabapple   	Common chokecherry,   common lilac,   silver buffaloberry	Manchurian	Jack pine, eastern   white pine, green   ash, red pine,   Siberian elm	Imperial Carolina   poplar, eastern   cottonwood		
Clearriver	7	  Peking cotoneaster,   honeysuckle 	  Common lilac, late   lilac, silver   buffaloberry	Eastern redcedar,   Manchurian   crabapple, Scotch   pine, ponderosa   pine, Russian-olive	  Jack pine, eastern   white pine, green   ash, Siberian elm 	  Silver maple,   eastern cottonwood 		
Zimmerman    	4	  Redosier dogwood,   sargent crabapple   	  Common chokecherry,   common lilac 	  Siberian crabapple,   eastern redcedar,   Manchurian   crabapple, Russian-   olive	Jack pine, paper birch, eastern white pine, green ash, red pine, Siberian elm	  Imperial Carolina   poplar, eastern   cottonwood		
Meehan	3		  American plum,   common lilac   	Blue spruce, eastern   redcedar, Scotch   pine, white spruce 	Norway spruce, jack pine, eastern white pine, green ash, red pine, Siberian elm			
Pits, gravel	1	 	 	 	 	 		
581:		 	 	 	 	 		
Percy	90	Honeysuckle,   redosier dogwood 	Common chokecherry,   common lilac   	Bur oak, Russian-   olive, white spruce   	Golden willow,   Siberian elm 	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood		
   Haug  	5	   	   	 	 	 		

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and	Percent of	Trees having predicted 20-year average height, in feet, of						
component name	map unit	<8	8-15	16-25	26-35	>35		
581: Boash	3	  Nanking cherry,   Peking cotoneaster,   redosier dogwood	  American plum,   common chokecherry,   common lilac	·	  Siberian elm, white   willow 	  Silver maple,   imperial Carolina   poplar, eastern   cottonwood		
Skagen	2	  Nanking cherry,   sargent crabapple   	American plum,   common chokecherry,   common lilac	  Scotch pine, bur   oak, Russian-olive     		Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood		
582: Roliss	85	  Redosier dogwood,   sargent crabapple   	  Common chokecherry,   common lilac   	  Eastern arborvitae,   Black Hills spruce,   bur oak, Russian-   olive, white spruce	  Golden willow,   Siberian elm 	  Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood		
Roliss, depressional	7							
Boash	5   5 	  Nanking cherry,   Peking cotoneaster,   redosier dogwood 	  American plum,   common chokecherry,   common lilac 	·	  Siberian elm, white   willow   	  Silver maple,   imperial Carolina   poplar, eastern   cottonwood		
Haug	3							
583: Nereson	85	  -  Peking cotoneaster,   redosier dogwood   	  Common chokecherry,   common lilac 	  Blue spruce, eastern   redcedar, Scotch   pine, bur oak,   Russian-olive,	  Golden willow,   Siberian elm 	  Silver maple,   imperial Carolina   poplar, eastern   cottonwood		
Percy	10	  Redosier dogwood,   sargent crabapple 	  Common chokecherry,  common lilac 	white spruce    Blue spruce, Black   Hills spruce, bur   oak, Russian-olive,   white spruce	  Golden willow,   Siberian elm 	  Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood		
Pelan	   3 	  Peking cotoneaster,   redosier dogwood   	American plum, common chokecherry, hedge cotoneaster, common lilac, silver buffaloberry	  Ponderosa pine,   Manchurian   crabapple, bur oak,   Russian-olive	  Green ash, Siberian   elm 	  Silver maple,   imperial Carolina   poplar, eastern   cottonwood		

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and	Percent of	Trees having predicted 20-year average height, in feet, of					
component name	map unit	<8	8-15	16-25	26-35	>35	
583: Foxhome	2	  Nanking cherry,   Peking cotoneaster   	Common chokecherry, common lilac, silver buffaloberry	   Siberian crabapple,   eastern redcedar,   ponderosa pine,   Manchurian   crabapple, bur oak,   Russian-olive	  Green ash, Siberian   elm   	  Silver maple,   imperial Carolina   poplar, eastern   cottonwood	
627:			 	 			
Tawas	90						
Leafriver	4	 	 	 	 	 	
Lupton	   4	 	 	 	 !	 	
Cormant	2	  Nanking cherry,   Peking cotoneaster,   redosier dogwood 	  American   cranberrybush,   American plum,   common chokecherry,   common lilac	  Blue spruce,   Manchurian   crabapple, black   ash, white spruce	  Golden willow, white   willow   	Eastern cottonwood,   Siouxland   cottonwood	
630:							
Wildwood	90						
Boash	<b>4</b>	  Nanking cherry,   Peking cotoneaster,   redosier dogwood	American plum,   common chokecherry,   common lilac	·	  Siberian elm, white   willow 	  Silver maple,   imperial Carolina   poplar, eastern   cottonwood	
Dora	4						
Espelie	2	  Nanking cherry,   Peking cotoneaster,   redosier dogwood	  American plum,   common chokecherry,   common lilac	  Eastern arborvitae,   Black Hills spruce,   Manchurian   crabapple	  Golden willow, white   willow 	Silver maple,   imperial Carolina   poplar, eastern   cottonwood	
643:			 	 	 	 	
Huot	85	Redosier dogwood,	Common chokecherry,   common lilac 	Blue spruce, eastern   redcedar, bur oak,   Russian-olive,   white spruce	Common hackberry,   Siberian elm	Eastern cottonwood,   Siouxland   cottonwood	
Thiefriver	12	  Nanking cherry,   redosier dogwood     	Common chokecherry,	  Eastern arborvitae,   peashrub, Black   Hills spruce,   Russian-olive	  Golden willow,   Siberian elm, white   willow 	Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood	

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and	Percent of	Trees having predicted 20-year average height, in feet, of						
component name	map unit	<8	8-15	16-25	26-35	>35		
643: Redby	3	  Peking cotoneaster,   redosier dogwood,   sargent crabapple	American   cranberrybush,   American plum,   common lilac	  Blue spruce,   Russian-olive   	Norway spruce, common hackberry, jack pine, paper birch, green ash, red pine, Siberian elm	Eastern cottonwood, Siouxland cottonwood		
644:								
Boash	85	Nanking cherry,   Peking cotoneaster,   redosier dogwood	American plum,   common chokecherry,   common lilac	·	Siberian elm, white willow	Silver maple, imperial Carolina poplar, eastern cottonwood		
Percy	7	  Redosier dogwood,   sargent crabapple   		Blue spruce, Black   Hills spruce, bur   oak, Russian-olive,   white spruce	Golden willow,   Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood		
Woodslake	5							
Strandquist      	3	  Redosier dogwood,   sargent crabapple   	  Common chokecherry,   common lilac   	  American   mountainash, Black   Hills spruce, bur   cak, Russian-olive,   white spruce	  Golden willow,   Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood		
645:		!	!	!				
Espelie    	85	Nanking cherry,   Peking cotoneaster,   redosier dogwood	American plum,   common chokecherry,   common lilac	Eastern arborvitae,   Black Hills spruce,   Manchurian   crabapple	Golden willow, white   willow 	Silver maple, imperial Carolina poplar, eastern cottonwood		
Grano      	5	  Honeysuckle,   redosier dogwood     		  Black Hills spruce,   Russian-olive,   white spruce 	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood		
Hilaire      	5	Peking cotoneaster,   redosier dogwood   	American plum,   common chokecherry   	Black Hills spruce,   Manchurian   crabapple, Scotch   pine, white spruce	Norway spruce, golden willow	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood		
  Wildwood	5	 	 	 	   			

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and	Percent of	 	Trees having predic	ted 20-year average h	eight, in feet, of	
component name	map unit	<8	8-15	16-25	26-35	>35
651:   Thiefriver    	85	    Nanking cherry,   redosier dogwood   	  Common chokecherry,  common lilac 	  Eastern arborvitae,   peashrub, Black   Hills spruce,   Russian-olive	    Golden willow,   Siberian elm, white   willow 	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Grano	5	  Honeysuckle,   redosier dogwood   	  Common chokecherry,   common lilac 	  Black Hills spruce,   Russian-olive,   white spruce	  Golden willow,   Siberian elm 	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Huot	5	  Redosier dogwood,   sargent crabapple   	  Common chokecherry,   common lilac 	  Blue spruce, eastern   redcedar, bur oak,   Russian-olive,   white spruce	  Common hackberry,   Siberian elm 	  Eastern cottonwood,   Siouxland   cottonwood
 	5	   	   	 	   	 
708: Rushlake	85	  Peking cotoneaster,   redosier dogwood 	  American   cranberrybush,   common lilac	  Eastern redcedar,   bur oak, white   spruce	  Norway spruce, jack   pine, eastern white   pine, green ash,   red maple	· -
Corliss	6	  Honeysuckle, sargent   crabapple   	  Common chokecherry,   common lilac 	   Eastern redcedar,   ponderosa pine,   Black Hills spruce,   Scotch pine,   Russian-olive	Jack pine, eastern   white pine, green   ash, Siberian elm	Silver maple, eastern cottonwood
Redby     -   	5	  Peking cotoneaster,   redosier dogwood,   sargent crabapple 	American   cranberrybush,   American plum,   common lilac	  Blue spruce,   Russian-olive   	Norway spruce, common hackberry, jack pine, paper birch, green ash, red pine, Siberian elm	Eastern cottonwood, Siouxland cottonwood
Hangaard	3	  Common ninebark,   honeysuckle,   redosier dogwood	  Common chokecherry,   common lilac	  Eastern arborvitae,   Black Hills spruce,   Russian-olive	  Golden willow,   Siberian elm, white   willow	Imperial Carolina   poplar, eastern   cottonwood
Pits, gravel	1	 	 			 

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and	Percent of		Trees having predic	ted 20-year average h	eight, in feet, of	
component name	map unit	<8	8-15	16-25	26-35	>35
712: Rosewood	85	Redosier dogwood,   sargent crabapple	Common chokecherry,	  Eastern arborvitae,   peashrub, Black   Hills spruce,   Russian-olive	  Golden willow,   Siberian elm, white   willow 	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Deerwood	6	 			 	 
Hangaard	5	  Common ninebark,   honeysuckle,   redosier dogwood	  Common chokecherry,   common lilac	  Eastern arborvitae,   Black Hills spruce,   Russian-olive	  Golden willow,   Siberian elm, white   willow	Imperial Carolina   poplar, eastern   cottonwood
Ulen	<b>4</b>	  Nanking cherry,   sargent crabapple	Common chokecherry, common lilac	Blue spruce, eastern   redcedar, bur oak,   Russian-olive,   white spruce	  Golden willow,   Siberian elm   	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
721B: Corliss	85	  Honeysuckle, sargent   crabapple 	Common chokecherry, common lilac	  Eastern redcedar,   ponderosa pine,   Black Hills spruce,   Scotch pine,	Jack pine, eastern white pine, green ash, Siberian elm	  Silver maple,   eastern cottonwood
Rushlake	     10	    Peking cotoneaster,   redosier dogwood 	American cranberrybush, common lilac	Russian-olive    Eastern redcedar,   bur oak, white   spruce	    Norway spruce, jack   pine, eastern white   pine, green ash,   red maple	·
Hangaard	4 	  Common ninebark,   honeysuckle,   redosier dogwood	Common chokecherry,	  Eastern arborvitae,   Black Hills spruce,   Russian-olive	  Golden willow,   Siberian elm, white   willow	Imperial Carolina   poplar, eastern   cottonwood
Pits, gravel	1					
733: Berner	90					
Grygla	5	Nanking cherry, Peking cotoneaster, common ninebark, redosier dogwood	American cranberrybush, common lilac	  Eastern arborvitae,   Black Hills spruce,   black ash, white   spruce	  Paper birch, green   ash 	Silver maple, Siouxland cottonwood
Seelyeville	5	 				 

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and	Percent	 	Trees having predic	ted 20-year average h	eight, in feet, of	
component name	map unit	<8	8-15	16-25	26-35	>35
737: Mahkonce	85	  Honeysuckle,   redosier dogwood   	American plum,   common chokecherry,   hedge cotoneaster,   common lilac, late   lilac	Amur maple, Black Hills spruce, Scotch pine, bur oak, Russian-olive, white spruce	  Eastern white pine,   green ash, red pine 	  Silver maple,   eastern cottonwood   
Auganaush	10	  Nanking cherry,   Peking cotoneaster,   common ninebark	  Common chokecherry,   silver buffaloberry   		  Golden willow, green   ash 	  Silver maple,   eastern cottonwood   
Eckvoll	5	  Peking cotoneaster,   redosier dogwood     	American plum,   common chokecherry	  Blue spruce, eastern   redcedar,   Manchurian   crabapple, Scotch   pine, bur oak,   white spruce	  American basswood,   eastern white pine,   golden willow   	  Silver maple,   eastern cottonwood     
755:		į	į	į		
Woodslake	85					
Boash	8	  Nanking cherry,   Peking cotoneaster,   redosier dogwood	American plum,   common chokecherry,   common lilac	  Eastern arborvitae,   Manchurian   crabapple, European   larch	willow	Silver maple,   imperial Carolina   poplar, eastern   cottonwood
Wildwood	5	 	 I	 	 	 
Dora	2	 	 I	 	 	 
767:						
Auganaush	90	Nanking cherry,   Peking cotoneaster,   common ninebark	Common chokecherry,   silver buffaloberry   		Golden willow, green   ash   	Silver maple,   eastern cottonwood   
Mustinka	5	  Nanking cherry,   redosier dogwood     	  American plum,   common chokecherry     	   Siberian crabapple,   eastern arborvitae,   peashrub, Black   Hills spruce,   Manchurian   crabapple, Russian-   olive	  Golden willow, green   ash, Siberian elm     	   Imperial Carolina   poplar, eastern   cottonwood
Wildwood	   3 					

		Table 10Windb	reaks and Environment	al PlantingsContinu	ed	
	Percent		Trees having predic	ted 20-year average he	eight, in feet, of	
Map symbol and	of	İ				
component name	map unit	<8	8-15	16-25	26-35	>35
767:   	2			 		 
mankonce	2	Honeysuckle,   redosier dogwood     	American plum,   common chokecherry,   hedge cotoneaster,   common lilac, late   lilac	Amur maple, Black   Hills spruce,   Scotch pine, bur   oak, Russian-olive,   white spruce	Eastern white pine,   green ash, red pine	-
794:		İ	İ	İ		
Clearriver  	85	Peking cotoneaster,   honeysuckle	Common lilac, late   lilac, silver   buffaloberry 	Eastern redcedar,   Manchurian   crabapple, Scotch   pine, ponderosa   pine, Russian-olive	Jack pine, eastern   white pine, green   ash, Siberian elm	Silver maple,   eastern cottonwood 
Hiwood	7	Redosier dogwood,	Common lilac, late   lilac, silver   buffaloberry	Siberian crabapple,   Manchurian   crabapple, Russian-   olive	white pine, green	Imperial Carolina   poplar, eastern   cottonwood
Meehan	5	  Nanking cherry,   Peking cotoneaster,   redosier dogwood	  American plum,   common lilac   	  Blue spruce, eastern   redcedar, Scotch   pine, white spruce 	   Norway spruce, jack   pine, eastern white   pine, green ash,   red pine, Siberian   elm	
Faunce	3	  Honeysuckle, sargent   crabapple     	Common chokecherry, common lilac, silver buffaloberry	  Blue spruce,   Manchurian   crabapple, bur oak,   Russian-olive,   white spruce	Jack pine, eastern   white pine, green   ash, red pine,   Siberian elm	Imperial Carolina   poplar, eastern   cottonwood
1002:						
Fluvaquents, frequently		İ				
flooded	90					
   Seelyeville	6	 	 	 	 	 
Hapludalfs	2	Nanking cherry,	American plum, common lilac	Manchurian	Paper birch, eastern	
		Peking cotoneaster, redosier dogwood	COMMON TITEC	crabapple, red pine, white spruce	white pine, green   ash	eastern cottonwood

	Percent		Trees having predic	ted 20-year average h	eight, in feet, of	
Map symbol and	of					
component name	map unit	<8	8-15	16-25	26-35	>35
				!		!
767:	•					
Mahkonce	2	Honeysuckle,   redosier dogwood	American plum, common chokecherry,	Amur maple, Black   Hills spruce,	Eastern white pine,	sliver maple,   eastern cottonwood
		redusier dogwood	hedge cotoneaster,	Scotch pine, bur	green asm, red pine	eastern cottonwood
i		i I	common lilac, late	oak, Russian-olive,		! 
İ			lilac	white spruce		
794:						
Clearriver	85	Peking cotoneaster,		Eastern redcedar,	Jack pine, eastern	Silver maple,
		honeysuckle	lilac, silver buffaloberry	Manchurian	white pine, green   ash, Siberian elm	eastern cottonwood
		 	Duffaloberry	crabapple, Scotch pine, ponderosa	asn, Siberian eim	 
		I 	I 	pine, Russian-olive	1	 
Hiwood	7	Redosier dogwood,	Common lilac, late	Siberian crabapple,	Jack pine, eastern	Imperial Carolina
		sargent crabapple	lilac, silver	Manchurian	white pine, green	poplar, eastern
			buffaloberry	crabapple, Russian-		cottonwood
				olive	Siberian elm	
Meehan	5	  Nanking cherry,	American plum,	  Blue spruce, eastern	  Norway spruce. iack	  Imperial Carolina
		Peking cotoneaster,	· -	redcedar, Scotch	pine, eastern white	
i		redosier dogwood		pine, white spruce	pine, green ash,	cottonwood
İ			İ	j	red pine, Siberian	İ
		[			elm	[
H	3	 	 	 	 	 
Faunce	3	Honeysuckle, sargent   crabapple	common chokecherry,	Blue spruce,   Manchurian	Jack pine, eastern   white pine, green	Imperial Carolina   poplar, eastern
		Clabappie	silver buffaloberry	·		cottonwood
i			bilver bulluloberry	Russian-olive,	Siberian elm	
İ				white spruce	İ	
1002:						
Fluvaquents, frequently	90	 	 	 	 	 
flooded	90	 	 	 	 	 
Seelyeville	6					
i		j	İ	j	j	İ
Hapludalfs	2	Nanking cherry,	American plum,	Manchurian	Paper birch, eastern	
		Peking cotoneaster,	common lilac	crabapple, red	white pine, green	eastern cottonwood,
		redosier dogwood		pine, white spruce	ash	Siouxland
		 	 	 	 	cottonwood
Water	2		 			
j				İ		
1030:						
Pits, gravel	75					

Udipsamments----- 20

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and	Percent of	 	Trees having predic	ted 20-year average he	eight, in feet, of	
component name	map unit	<8	8-15	16-25	26-35	>35
1030: Corliss	2	    Honeysuckle, sargent   crabapple   	  Common chokecherry,  common lilac 	  Eastern redcedar,   ponderosa pine,   Black Hills spruce,   Scotch pine,   Russian-olive	Jack pine, eastern   white pine, green   ash, Siberian elm	  Silver maple,   eastern cottonwood   
Karlstad	2	  Nanking cherry,   Peking cotoneaster 	  Common chokecherry,   common lilac 	Blue spruce, eastern   redcedar, bur oak,   Russian-olive,   white spruce	  Golden willow,   Siberian elm 	   Eastern cottonwood,   Siouxland   cottonwood
Hangaard	1	  Common ninebark,   honeysuckle,   redosier dogwood	  Common chokecherry,   common lilac	Eastern arborvitae,   Black Hills spruce,   Russian-olive	  Golden willow,   Siberian elm, white   willow	  Imperial Carolina   poplar, eastern   cottonwood
1031:			 		 	 
Seelyeville, ponded	90					
Cathro	4		 		 	
Dora	3					
Markey	3					
1067: Fluvaquents, frequently flooded	60	 	 	 	 	 
Hapludalfs	30	  Nanking cherry,   Peking cotoneaster,   redosier dogwood	  American plum,   common lilac 	  Manchurian   crabapple, red   pine, white spruce	Paper birch, eastern   white pine, green   ash	
Seelyeville	5					
Water	5					
1133B: Skime	85	  Peking cotoneaster,   sargent crabapple   	  Common chokecherry,  common lilac   	Black Hills spruce,   Siberian crabapple,   Manchurian   crabapple, Scotch   pine, Russian-   clive, white spruce	ash, Siberian elm	  Eastern cottonwood,   Siouxland   cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and	Percent of	 	Trees having predic	ted 20-year average h	eight, in feet, of	
component name	map unit	<8	8-15	16-25	26-35	>35
1133B:     Hiwood	10	    Redosier dogwood,   sargent crabapple   	  Common lilac, late   lilac, silver   buffaloberry	  Siberian crabapple,   Manchurian   crabapple, Russian-   olive	  Jack pine, eastern  white pine, green  ash, red pine,  Siberian elm	    Imperial Carolina   poplar, eastern   cottonwood 
Zippel	5	  Redosier dogwood,   sargent crabapple   	American plum, common chokecherry, common lilac	  Eastern arborvitae,   Black Hills spruce,   white spruce 	Common hackberry, golden willow, green ash	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
1134:			İ			
Borup      	55	Honeysuckle,   redosier dogwood     	Common chokecherry,   common lilac   	Eastern arborvitae,   peashrub, Black   Hills spruce,   Russian-olive	Golden willow, green   ash, Siberian elm   	Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood
Glyndon	35	  Peking cotoneaster,   honeysuckle 	American plum,   common chokecherry,   common lilac	Blue spruce, Black   Hills spruce, bur   oak, Russian-olive,   white spruce	Golden willow,   Siberian elm	Imperial Carolina   poplar, eastern   cottonwood
Augsburg, depressional	5					
Skime	5	  Peking cotoneaster,   sargent crabapple   		Black Hills spruce,   Siberian crabapple,   Manchurian   crabapple, Scotch   pine, Russian-   olive, white spruce	white pine, green   ash, Siberian elm 	   Eastern cottonwood   Siouxland   cottonwood
1144:		 	l I		 	
Strathcona, depressional	45					
Kratka, depressional	45	 			 	 
Kratka	5	  Nanking cherry,   Peking cotoneaster   	  Common chokecherry,   common lilac   	  Blue spruce, eastern   redcedar, bur oak,   Russian-olive,   white spruce	  Golden willow,   Siberian elm   	  Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood
Northwood	5	 			 	 

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and	Percent of	 	Trees having predic	ted 20-year average h	eight, in feet, of	
component name	map unit	<8	8-15	16-25	26-35	>35
1154:	 	l		l	1	l
Sax	   90 				 	
Wabanica	   5     	  Honeysuckle,   redosier dogwood   	Common chokecherry,   common lilac	Peashrub, Black   Hills spruce,   Manchurian   crabapple, black   ash, Russian-olive	  Golden willow,   Siberian elm, white   willow 	Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood
Cathro	   3 					
Woodslake	   2 	 		 		
1158:						
Skagen	85       	Nanking cherry,   sargent crabapple     	American plum,   common chokecherry,   common lilac 	Scotch pine, bur   oak, Russian-olive     	Common hackberry,   laurel willow,   green ash 	Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood
Percy	10     	Redosier dogwood,   sargent crabapple   	Common chokecherry,   common lilac	Blue spruce, Black   Hills spruce, bur   oak, Russian-olive,   white spruce	Golden willow,   Siberian elm   	Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood
Foxhome	   5       	  Nanking cherry,   Peking cotoneaster     		eastern redcedar,	  Green ash, Siberian   elm     	  Silver maple,   imperial Carolina   poplar, eastern   cottonwood
1170:				İ	İ	
Skagen, very cobbly	85     	Nanking cherry,   sargent crabapple    -	American plum,   common chokecherry,   common lilac 	Scotch pine, bur   oak, Russian-olive     	Common hackberry,   laurel willow,   green ash 	Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood
Percy, very cobbly	   10     	  Redosier dogwood,   sargent crabapple   	Common chokecherry,   common lilac	  Blue spruce, Black   Hills spruce, bur   oak, Russian-olive,   white spruce	  Golden willow,   Siberian elm   	Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood

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Map symbol and	Percent of	 	Trees having predic	ted 20-year average h	eight, in feet, of	
component name	map unit	<8	8-15	16-25	26-35	>35
1170: Foxhome	5	  Nanking cherry,   Peking cotoneaster   	  Common chokecherry,  common lilac,  silver buffaloberry	eastern redcedar,	  Green ash, Siberian   elm   	  Silver maple,   imperial Carolina   poplar, eastern   cottonwood
1179B:		 		 		
Moranville	85	Peking cotoneaster,   redosier dogwood 	Common chokecherry,   hedge cotoneaster,   common lilac	Amur maple, Black   Hills spruce,   Scotch pine, bur   oak, white spruce	Norway spruce, paper   birch, eastern   white pine, red   pine	Silver maple,   eastern cottonwood 
Baudette	5	  Nanking cherry,   Peking cotoneaster,   redosier dogwood   	  American   cranberrybush,   common lilac   	Amur maple, blue   spruce, eastern   arborvitae,   Manchurian   crabapple, Scotch   pine, bur oak,   white spruce	  Eastern white pine,   green ash, red pine     	
Hiwood	5	  Redosier dogwood,   sargent crabapple 	  Common lilac, late   lilac, silver   buffaloberry	  Siberian crabapple,   Manchurian   crabapple, Russian-   olive	Jack pine, eastern white pine, green ash, red pine, Siberian elm	  Imperial Carolina   poplar, eastern   cottonwood
Spooner	5	  Nanking cherry,   Peking cotoneaster,   redosier dogwood	  American   cranberrybush,   common lilac	  Blue spruce, eastern   arborvitae, black   ash, white spruce	  Norway spruce,   golden willow,   green ash	  Silver maple,   Siouxland   cottonwood
1181:	 	 	 	 		
Rosewood	50	Redosier dogwood,   sargent crabapple   	Common chokecherry,   common lilac   	Eastern arborvitae,   peashrub, Black   Hills spruce,   Russian-olive	Golden willow,   Siberian elm   	Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood
Ulen	40	  Redosier dogwood,   sargent crabapple   		  Blue spruce, eastern   redcedar, bur oak,   Russian-olive,   white spruce	  Golden willow,   Siberian elm   	  Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and	Percent of	 	Trees having predic	ted 20-year average h	eight, in feet, of	
component name	map unit	<8	8-15	16-25	26-35	>35
1181: Redby	5	  Peking cotoneaster,   redosier dogwood,   sargent crabapple	American   cranberrybush,   American plum,   common lilac	  Blue spruce,   Russian-olive   	Norway spruce, common hackberry, jack pine, paper birch, green ash, red pine, Siberian elm	  Eastern cottonwood,   Siouxland   cottonwood
Deerwood	3	 	 	 	 	 
Syrene	2	  Redosier dogwood,   sargent crabapple   	  Common chokecherry,   common lilac 	   Eastern redcedar,   Black Hills spruce,   bur oak, Russian-   olive, white spruce	  Golden willow,   Siberian elm 	Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood
1182: Warroad	     85	    Nanking cherry,	    American	    Eastern arborvitae,	Common hackberry,	    Silver maple,
		redosier dogwood	cranberrybush,	peashrub, Black   Hills spruce, black   ash, white spruce	golden willow,	eastern cottonwood, Siouxland cottonwood
Wabanica	7	  Honeysuckle,   redosier dogwood   		Peashrub, Black   Hills spruce,   Manchurian   crabapple, black   ash, Russian-olive	  Golden willow,   Siberian elm, white   willow	Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood
Enstrom	5	  Peking cotoneaster,   redosier dogwood 	American   cranberrybush,   American plum,   common chokecherry	Blue spruce, eastern   redcedar,   Manchurian   crabapple, bur oak,   white spruce	  Jack pine, paper   birch, golden   willow	Eastern cottonwood,   Siouxland   cottonwood
Sax	3	 	 	 	 	 
1187: Dora, ponded	     90	   	   	   	   	   
Seelyeville, ponded	4	 			 	 
Wildwood	4	 	 	 	 	 
Boash	2	  Nanking cherry,   Peking cotoneaster,   redosier dogwood   	  American plum,   common chokecherry,   common lilac 		  Siberian elm, white   willow 	  Silver maple,   imperial Carolina   poplar, eastern   cottonwood

	Trees having predicted 20-year average height, in feet, of					
					of	Map symbol and
>35	26-35	16-25	8-15	<8	map unit	component name
	 					91:

Map symbol and	Percent of	 	eight, in feet, of	oi		
component name	map unit	<8	8-15	16-25	26-35	>35
1191:   Sahkahtay  	85	  Honeysuckle,   redosier dogwood   	  American plum,   common chokecherry,   common lilac	  Amur maple, eastern   arborvitae, Black   Hills spruce, black   ash, white spruce	  Common hackberry,   paper birch, golden   willow, green ash	  Silver maple,   eastern cottonwood   
   Cormant      	5	   Nanking cherry,   Peking cotoneaster,   redosier dogwood	American cranberrybush, American plum, common chokecherry, common lilac	Blue spruce,   Manchurian   crabapple, black   ash, white spruce	  Golden willow, white   willow 	Eastern cottonwood, Siouxland cottonwood
Deerwood	5	 	 	 	 	 
Karlstad	3	  Nanking cherry,   Peking cotoneaster	  Common chokecherry,   common lilac	Blue spruce, eastern   redcedar, bur oak,   Russian-olive,   white spruce	  Golden willow,   Siberian elm	Eastern cottonwood,   Siouxland   cottonwood
Redby      	2	  Peking cotoneaster,   redosier dogwood,   sargent crabapple 	  American   cranberrybush,   American plum,   common lilac 	  Blue spruce,   Russian-olive     	Norway spruce,   common hackberry,   jack pine, paper   birch, green ash,   red pine, Siberian   elm	  Eastern cottonwood,   Siouxland   cottonwood 
1206:						
Cormant	55	Nanking cherry,   Peking cotoneaster,   redosier dogwood	American   cranberrybush,   American plum,   common chokecherry,   common lilac	Peashrub, Black   Hills spruce,   Manchurian   crabapple, black   ash, white spruce	Golden willow, white   willow	Eastern cottonwood,   Siouxland   cottonwood
Redby        	35	  Nanking cherry,   redosier dogwood   	  American   cranberrybush,   common lilac   	Blue spruce, Black   Hills spruce,   Scotch pine,   Russian-olive,   white spruce	Norway spruce, common hackberry, jack pine, paper birch, eastern white pine, green ash, red pine	Imperial Carolina   poplar, eastern   cottonwood
Hiwood	5	  Redosier dogwood,   sargent crabapple 	  Common lilac, late   lilac, silver   buffaloberry	  Siberian crabapple,   Manchurian   crabapple, Russian-   olive	  Jack pine, eastern   white pine, green   ash, red pine,   Siberian elm	  Imperial Carolina   poplar, eastern   cottonwood
Leafriver	5	 	 	 	 	 

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and	Percent of	Trees having predicted 20-year average height, in feet, of					
component name	map unit	<8	8-15	16-25	26-35	>35	
1214: Mustinka	90	  Nanking cherry,   redosier dogwood   	  American plum,   common chokecherry   		  Golden willow, green   ash, Siberian elm 	Imperial Carolina poplar, eastern cottonwood	
Espelie	4	  Nanking cherry,   Peking cotoneaster,   redosier dogwood	  American plum,   common chokecherry,   common lilac		Golden willow, white   willow	Silver maple, imperial Carolina poplar, eastern cottonwood	
Wildwood	4						
Dalbo	2	  Peking cotoneaster,   redosier dogwood   	American   cranberrybush,   eastern arborvitae,   hedge cotoneaster,   common lilac	Amur maple,   Manchurian   crabapple, bur oak,   white spruce	Eastern white pine,	Silver maple, imperial Carolina poplar, eastern cottonwood	
1274B: Redby	40	  Honeysuckle,   redosier dogwood 	  American   cranberrybush,   common lilac	  Blue spruce,   Russian-olive,   white spruce 	Norway spruce,   common hackberry,   jack pine, paper   birch, green ash,   red pine	Imperial Carolina poplar, eastern cottonwood	
Hiwood	30	  Siberian crabapple,   sargent crabapple   	  American plum,   common lilac   	  Manchurian   crabapple, Scotch   pine, Russian-olive   	Jack pine, paper birch, eastern white pine, green ash, red pine, Siberian elm	Imperial Carolina poplar, eastern cottonwood	
Leafriver, wooded	15						
Clearriver	5	  Peking cotoneaster,   honeysuckle   	  Common lilac, late   lilac, silver   buffaloberry 	  Eastern redcedar,   Manchurian   crabapple, Scotch   pine, ponderosa   pine, Russian-olive	Jack pine, eastern   white pine, green   ash, Siberian elm	Silver maple, eastern cottonwood	

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Map symbol and	Percent	 	Trees having predicted 20-year average height, in feet, of				
component name	map unit	<8	8-15	16-25	26-35	>35	
1274B: Cormant	   5     	  Nanking cherry,   Peking cotoneaster,   redosier dogwood	  American   cranberrybush,   American plum,   common chokecherry,   common lilac	  Blue spruce,   Manchurian   crabapple, black   ash, white spruce	    Golden willow, white   willow   	  Eastern cottonwood,  Siouxland  cottonwood	
Zimmerman	   5     	  Redosier dogwood,   sargent crabapple   		  Siberian crabapple,   eastern redcedar,   Manchurian   crabapple, Russian-   olive	  Jack pine, paper   birch, eastern   white pine, green   ash, red pine,   Siberian elm	  Imperial Carolina   poplar, eastern   cottonwood	
1298:							
Borup	90       	Nanking cherry,   redosier dogwood    -	Common chokecherry,   common lilac   	Peashrub, American   mountainash, Black   Hills spruce,   Russian-olive	Golden willow, green   ash, Siberian elm   	Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood	
Augsburg, depressional	3						
Glyndon	   3   	  Peking cotoneaster,   honeysuckle   	American plum,   common chokecherry,   common lilac		  Golden willow,   Siberian elm 	  Imperial Carolina   poplar, eastern   cottonwood	
Sago	2						
Skime	   2       	  Peking cotoneaster,   sargent crabapple   	  Common chokecherry,   common lilac   	Black Hills spruce,   Siberian crabapple,   Manchurian   crabapple, Scotch   pine, Russian-   olive, white spruce	white pine, green   ash, Siberian elm 	   Eastern cottonwood,   Siouxland   cottonwood   	
1302: Foldahl	   85       	  Peking cotoneaster,   redosier dogwood   	American plum, common chokecherry	  Blue spruce, eastern   redcedar,   Manchurian   crabapple, Scotch   pine, bur oak,   white spruce	  Golden willow, green   ash   	Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood	

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and	Percent		Trees having predic	ted 20-year average h	eight, in feet, of	
component name	map unit	<8	8-15	16-25	26-35	>35
1302:		 		 		 
Kratka	10	Nanking cherry,   Peking cotoneaster   	Common chokecherry,   common lilac   	Blue spruce, eastern   redcedar, bur oak,   Russian-olive,   white spruce	Golden willow,   Siberian elm   	Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood
Foxhome	5	  Nanking cherry,   Peking cotoneaster  -  -	  Common chokecherry,   common lilac,   silver buffaloberry	  Siberian crabapple,   eastern redcedar,   ponderosa pine,   Manchurian   crabapple, bur oak,   Russian-olive	Green ash, Siberian   elm 	Silver maple,   imperial Carolina   poplar, eastern   cottonwood
1304:			İ			İ
Glyndon	85   	Nanking cherry,   Peking cotoneaster    -	American plum,   common chokecherry,   common lilac	Blue spruce,   peashrub, Black   Hills spruce, bur   oak, Russian-olive,   white spruce	Golden willow,   Siberian elm   	Imperial Carolina   poplar, eastern   cottonwood 
Borup	10	  Nanking cherry,   redosier dogwood   		Peashrub, American   mountainash, Black   Hills spruce,   Russian-olive	  Golden willow, green   ash, Siberian elm 	Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood
Skime	5	  Peking cotoneaster,   sargent crabapple   	Common chokecherry,  common lilac	Black Hills spruce,   Siberian crabapple,   Manchurian   crabapple, Scotch   pine, Russian-   olive, white spruce	Jack pine, eastern   white pine, green   ash, Siberian elm	   Eastern cottonwood,   Siouxland   cottonwood 
1305:						
Hilaire	85	Peking cotoneaster,   redosier dogwood   	American plum,   common chokecherry	Black Hills spruce,   Manchurian   crabapple, Scotch   pine, white spruce	Norway spruce,   golden willow 	Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood
Espelie	11	Nanking cherry,   Peking cotoneaster,   redosier dogwood	American plum,   common chokecherry,   common lilac	Eastern arborvitae,   Black Hills spruce,   Manchurian   crabapple	Golden willow, white   willow 	Silver maple,   imperial Carolina   poplar, eastern   cottonwood

	Percent   Trees having predicted 20-year average height, in feet, of						
Map symbol and	of		1	1	1	1	
component name	map unit	<8	8-15	16-25	26-35	>35	
1305: Grano	     2	    Honeysuckle,	  Common chokecherry,	    Black Hills spruce,	    Golden willow,	    Imperial Carolina	
	       	redosier dogwood     	common lilac	Russian-olive,   white spruce   	Siberian elm   	poplar, eastern   cottonwood,   Siouxland   cottonwood	
Redby	2       	Peking cotoneaster,   redosier dogwood,   sargent crabapple	American   cranberrybush,   American plum,   common lilac	Blue spruce,   Russian-olive     	Norway spruce,   common hackberry,   jack pine, paper   birch, green ash,   red pine, Siberian   elm	Eastern cottonwood, Siouxland cottonwood	
1314:	 				1		
Tacoosh	90						
	ĺ		İ		İ		
Rifle	8						
Sax	   2	 	 	 	 	 	
1316:	 	 		 	 	 	
Wheatville	85   	Nanking cherry,   golden currant	American plum,   common chokecherry,   common lilac	Peashrub, Black   Hills spruce, bur   oak, Russian-olive,   white spruce	Golden willow,   Siberian elm 	Eastern cottonwood,   Siouxland   cottonwood	
Augsburg	   13     	  Redosier dogwood,   sargent crabapple   		  Black Hills spruce,   Russian-olive,   white spruce 	  Laurel willow,   golden willow,   Siberian elm, white   willow	Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood	
Grano	2     	   Honeysuckle,   redosier dogwood   	  Common chokecherry,   common lilac   	  Black Hills spruce,   Russian-olive,   white spruce 	  Golden willow,   Siberian elm   	Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood	
1326:	 	[ ]	] [	 	 	[ ]	
Augsburg, depressional	   45 	   	 	   	   	   	
Wabanica, depressional	   45 						
Sax	6						

Table 10.--Windbreaks and Environmental Plantings--Continued

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and	Percent	 	Trees having predic	ted 20-year average h	eight, in feet, of	
component name	map unit	<8	8-15	16-25	26-35	>35
1326: Espelie	2	  Nanking cherry,   Peking cotoneaster,   redosier dogwood	American plum,   common chokecherry,   common lilac		    Golden willow, white   willow 	Silver maple, imperial Carolina poplar, eastern cottonwood
Zippel	2	  Redosier dogwood,   sargent crabapple	  American plum,   common chokecherry,   common lilac	  Eastern arborvitae,   Black Hills spruce,   white spruce	  Common hackberry,   golden willow,   green ash	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
1327B: Karlstad	65	  Redosier dogwood,   sargent crabapple 	  Common chokecherry,   common lilac 	  Blue spruce, Black   Hills spruce, bur   oak, Russian-olive,   white spruce	  Golden willow,   Siberian elm 	Eastern cottonwood, Siouxland cottonwood
Marquette	25	  Honeysuckle, sargent   crabapple 	Common chokecherry, common lilac, silver buffaloberry	redcedar, bur oak,	  Green ash, red pine,   Siberian elm 	Eastern cottonwood, Siouxland cottonwood
Sahkahtay	7	  Honeysuckle,   redosier dogwood   	American plum,   common chokecherry,   common lilac	Amur maple, eastern   arborvitae, Black   Hills spruce, black   ash, white spruce	  Common hackberry,   paper birch, golden   willow, green ash	Silver maple,   eastern cottonwood
Redby	3	  Peking cotoneaster,   redosier dogwood,   sargent crabapple 	  American   cranberrybush,   American plum,   common lilac	  Blue spruce,   Russian-olive     	   Norway spruce,   common hackberry,   jack pine, paper   birch, green ash,   red pine, Siberian   elm	Eastern cottonwood, Siouxland cottonwood
1328: Northwood, wooded	90					
Berner, wooded	5					
Grygla	5	Nanking cherry,   Peking cotoneaster,   common ninebark,   redosier dogwood	  American   cranberrybush,   common lilac 	  Eastern arborvitae,   Black Hills spruce,   black ash, white   spruce	  Paper birch, green   ash   	Silver maple, Siouxland cottonwood

Map symbol and	Percent of		Trees having predic	ted 20-year average h	eight, in feet, of	
component name	map unit	<8	8-15	16-25	26-35	>35
	İ					
1333:						
Dora, wooded	90 	 	 	 	 	 
Lupton	   4 					
Wildwood	   4					
Auganaush	2       	  Nanking cherry,   Peking cotoneaster,   common ninebark	  Common chokecherry,   silver buffaloberry   		· ·	  Silver maple,   eastern cottonwood   
1356:	 	 	 	l I	l I	 
Water, miscellaneous.						
1399B:	 	 	 			 
Two Inlets	85     	Peking cotoneaster,   honeysuckle	Common lilac, silver   buffaloberry 	Blue spruce, eastern   redcedar, bur oak 	Jack pine, eastern   white pine, green   ash, red pine,   Siberian elm	Eastern cottonwood,   Siouxland   cottonwood
Wurtsmith	   6     	  Redosier dogwood,   sargent crabapple   	  American plum,   common lilac   	  Siberian crabapple,   eastern redcedar,   Manchurian   crabapple	Jack pine, paper   birch, eastern   white pine, green   ash, red pine,   Siberian elm	  Eastern cottonwood,   Siouxland   cottonwood 
Zimmerman	   6     	  Redosier dogwood,   sargent crabapple   	  Common chokecherry,   common lilac 	  Siberian crabapple,   eastern redcedar,   Manchurian   crabapple, Russian-   olive	Jack pine, paper birch, eastern white pine, green ash, red pine, Siberian elm	   Imperial Carolina   poplar, eastern   cottonwood
Meehan	   3     	  Nanking cherry,   Peking cotoneaster,   redosier dogwood   	  American plum,   common lilac     	  Blue spruce, eastern   redcedar, Scotch   pine, white spruce   	  Norway spruce, jack   pine, eastern white   pine, green ash,   red pine, Siberian   elm	
1401:				İ	İ	
Grygla, depressional	90					

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and	Percent of	Trees having predicted 20-year average height, in feet, of					
component name	map unit	<8	8-15	16-25	26-35	>35	
	3	  Nanking cherry,  Peking cotoneaster,  common ninebark,  redosier dogwood	  American   cranberrybush,   common lilac	  Eastern arborvitae,   black ash, white   spruce	    Paper birch, green   ash, white willow   	    Silver maple,   eastern cottonwood   	
Grygla	2	Nanking cherry,   Peking cotoneaster,   common ninebark,   redosier dogwood	American cranberrybush, common lilac	  Eastern arborvitae,   Black Hills spruce,   black ash, white   spruce		Silver maple,   Siouxland   cottonwood	
1402:			 	 	 	 	
Leafriver, wooded	90		i	i	i		
   Cormant      	4	  Nanking cherry,   Peking cotoneaster,   redosier dogwood	American cranberrybush, American plum, common chokecherry, common lilac	  Blue spruce,   Manchurian   crabapple, black   ash, white spruce	  Golden willow, white   willow   	  Eastern cottonwood,   Siouxland   cottonwood 	
Tawas	4						
Redby	2	  Peking cotoneaster,   redosier dogwood,   sargent crabapple 	American   cranberrybush,   American plum,   common lilac	  Blue spruce,   Russian-olive   	Norway spruce,   common hackberry,   jack pine, paper   birch, green ash,   red pine, Siberian   elm	  Eastern cottonwood,   Siouxland   cottonwood	
1404:			 			 	
Berner, wooded	90		 		 		
Lupton	4						
Northwood, wooded	4						
Grygla	2	Nanking cherry,   Peking cotoneaster,   common ninebark,   redosier dogwood	American cranberrybush, common lilac	  Eastern arborvitae,   Black Hills spruce,   black ash, white   spruce		  Silver maple,   Siouxland   cottonwood	
1405:			 	 	 	 	
Lallie	90	 I	 			 	
  Sax	7						

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and	Percent of	Trees having predicted 20-year average height, in feet, of					
component name	map unit	<8	8-15	16-25	26-35	>35	
1405: Wabanica	3	  Honeysuckle,   redosier dogwood   	  Common chokecherry,  common lilac   	  Peashrub, Black   Hills spruce,   Manchurian   crabapple, black   ash, Russian-olive	  Golden willow,   Siberian elm, white   willow 	   Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood	
1414:							
Nereson, very cobbly	85	Peking cotoneaster,   common lilac,   honeysuckle	American   cranberrybush,   common chokecherry 	Blue spruce, eastern   redcedar, bur oak,   Russian-olive,   white spruce	Golden willow,   Siberian elm   	Silver maple,   imperial Carolina   poplar, eastern   cottonwood	
Percy, very cobbly	10	Redosier dogwood,   sargent crabapple	Common chokecherry,   common lilac	   Blue spruce, Black   Hills spruce, bur   oak, Russian-olive,   white spruce	Golden willow,   Siberian elm 	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood	
Pelan	3	Peking cotoneaster,   redosier dogwood	American plum,   common chokecherry,   hedge cotoneaster,   common lilac,   silver buffaloberry	crabapple, bur oak,	  Green ash, Siberian   elm 	Silver maple,   imperial Carolina   poplar, eastern   cottonwood	
Foxhome	2	  Nanking cherry,   Peking cotoneaster 		Siberian crabapple,   eastern redcedar,   ponderosa pine,   Manchurian   crabapple, bur oak,   Russian-olive	  Green ash, Siberian   elm 	  Silver maple,   imperial Carolina   poplar, eastern   cottonwood	
1428:				 	 		
Karlsruhe	85	Nanking cherry, Peking cotoneaster, common chokecherry, redosier dogwood	American   cranberrybush,   American plum 	Eastern redcedar,   ponderosa pine,   Black Hills spruce,   bur oak	Common hackberry,   laurel willow,   golden willow,   green ash	Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood	
Syrene	10	  Redosier dogwood,   sargent crabapple   	  Common chokecherry,   common lilac   	  Eastern redcedar,   Black Hills spruce,   bur oak, Russian-   olive, white spruce	İ	   Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood	

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and	Percent of	Trees having predicted 20-year average height, in feet, of					
component name	map unit	<8	8-15	16-25	26-35	>35	
1428: Ulen	   5     	  Nanking cherry,   sargent crabapple   	  Common chokecherry,  common lilac 	   Blue spruce, eastern   redcedar, bur oak,   Russian-olive,   white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood	
1444:	 	 		 		 	
Wurtsmith	85       	Redosier dogwood,   sargent crabapple   	American plum,   common lilac   	Siberian crabapple,   eastern redcedar,   Manchurian   crabapple	Jack pine, paper birch, eastern white pine, green ash, red pine, Siberian elm	Eastern cottonwood,   Siouxland   cottonwood	
Meehan	10     	  Nanking cherry,   Peking cotoneaster,   redosier dogwood	  American plum,   common lilac   	Blue spruce, eastern   redcedar, Scotch   pine, white spruce	Norway spruce, jack pine, eastern white pine, green ash, red pine, Siberian elm		
Clearriver	2     	  Peking cotoneaster,   honeysuckle   	  Common lilac, late   lilac, silver   buffaloberry 	Eastern redcedar,   Manchurian   crabapple, Scotch   pine, ponderosa   pine, Russian-olive	Jack pine, eastern white pine, green ash, Siberian elm	  Silver maple,   eastern cottonwood   	
Two Inlets	2   	  Peking cotoneaster,   honeysuckle 	  Common lilac, silver   buffaloberry 	  Blue spruce, eastern   redcedar, bur oak   	Jack pine, eastern white pine, green ash, red pine, Siberian elm	Eastern cottonwood,   Siouxland   cottonwood	
Cormant	   1     	  Nanking cherry,   Peking cotoneaster,   redosier dogwood 	American   cranberrybush,   American plum,   common chokecherry,   common lilac	  Blue spruce,   Manchurian   crabapple, black   ash, white spruce	Golden willow, white willow	  Eastern cottonwood,   Siouxland   cottonwood 	
1448: Grano	   90     	  Honeysuckle,   redosier dogwood   	  Common chokecherry,   common lilac   	  Eastern arborvitae,   Black Hills spruce,   Russian-olive,   white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood	

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and	Percent of	Trees having predicted 20-year average height, in feet, of				
component name	map unit	<8	8-15	16-25	26-35	>35
1448: Percy	5	  Redosier dogwood,   sargent crabapple   	  Common chokecherry,  common lilac	  Blue spruce, Black   Hills spruce, bur   oak, Russian-olive,   white spruce	  Golden willow,   Siberian elm   	  Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood
Augsburg	3	  Redosier dogwood,   sargent crabapple   		Black Hills spruce,   Russian-olive,   white spruce	  Laurel willow,   golden willow,   Siberian elm, white   willow	Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood
Woodslake	2	 				
1449: Grano	90	  Honeysuckle,   redosier dogwood   	  Common chokecherry,   common lilac 	  Black Hills spruce,   Russian-olive,   white spruce	  Golden willow,   Siberian elm 	Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood
Percy	5	  Redosier dogwood,   sargent crabapple 	Common chokecherry,   common lilac	Blue spruce, Black   Hills spruce, bur   oak, Russian-olive,   white spruce	  Golden willow,   Siberian elm 	Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood
Augsburg	3	  Redosier dogwood,   sargent crabapple   		Black Hills spruce,   Russian-olive,   white spruce	  Laurel willow,   golden willow,   Siberian elm, white   willow	  Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood
Woodslake	2					
1807: Cathro, ponded	90					   
Haug	   4	 				 
Seelyeville, ponded	   4	 				 
Percy	2	  Redosier dogwood,   sargent crabapple   	Common chokecherry,   common lilac	Blue spruce, Black   Hills spruce, bur   oak, Russian-olive,   white spruce	  Golden willow,   Siberian elm   	  Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and	Percent   of	 	Trees having predic	ted 20-year average h	eight, in feet, of	
component name	map unit	<8	8-15	16-25	26-35	>35
1808: Markey, ponded	     90	 	 	 	 	   
Leafriver	   4	 	 	 		 
Seelyeville, ponded	   4 	 	 			 
Cormant	2       	  Nanking cherry,   Peking cotoneaster,   redosier dogwood	American   cranberrybush,   American plum,   common chokecherry,   common lilac	  Blue spruce,   Manchurian   crabapple, black   ash, white spruce	  Golden willow, white   willow 	Eastern cottonwood, Siouxland cottonwood
1918:			 			 
Croke	85       	Honeysuckle,   redosier dogwood   	American   cranberrybush,   common lilac	Eastern redcedar,   peashrub, Black   Hills spruce, bur   oak, white spruce	Eastern white pine, green ash	Imperial Carolina   poplar, eastern   cottonwood,   Siouxland   cottonwood
Augsburg	   13     	Redosier dogwood,   sargent crabapple	Common chokecherry,   common lilac	Black Hills spruce,   Russian-olive,   white spruce	Laurel willow,   golden willow,   Siberian elm, white   willow	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Grano	2       	  Honeysuckle,   redosier dogwood   	  Common chokecherry,   common lilac 	  Black Hills spruce,   Russian-olive,   white spruce 	  Golden willow,   Siberian elm 	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
1923B: Garnes, very stony	   85   	  Peking cotoneaster,   redosier dogwood,   sargent crabapple	American   cranberrybush,   American plum,   common lilac	  Eastern arborvitae,   Black Hills spruce,   Scotch pine, white   spruce	  Paper birch, eastern   white pine, green   ash, red pine	  Eastern cottonwood,   Siouxland   cottonwood
Chilgren	   10     	  Nanking cherry,   Peking cotoneaster,   common ninebark,   redosier dogwood	  American   cranberrybush,   common lilac 	  Eastern arborvitae,   black ash, white   spruce 	  Paper birch, green   ash, white willow   	  Silver maple,   eastern cottonwood   

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and	Percent	Trees having predicted 20-year average height, in feet, of				
component name	map unit	<8	8-15	16-25	26-35	>35
1923B: Eckvoll	3	  Peking cotoneaster,   redosier dogwood 	American plum,   common chokecherry	Blue spruce, eastern   redcedar,   Manchurian   crabapple, Scotch   pine, bur oak,   white spruce	American basswood,   eastern white pine,   golden willow	  Silver maple,   eastern cottonwood   
Pelan	2	  Peking cotoneaster,   redosier dogwood   	  American plum,   common chokecherry,   hedge cotoneaster,   common lilac,   silver buffaloberry	  Ponderosa pine,   Manchurian   crabapple, bur oak,   Russian-olive 	  Green ash, Siberian   elm 	Silver maple,   imperial Carolina   poplar, eastern   cottonwood
1984:			İ			
Leafriver	90					
Cormant	5	  Nanking cherry,   Peking cotoneaster,   redosier dogwood	American cranberrybush, American plum, common chokecherry, common lilac	Blue spruce,   Manchurian   crabapple, black   ash, white spruce	  Golden willow, white   willow   	  Eastern cottonwood,   Siouxland   cottonwood 
Markey	3	 		 		
Redby	2	  Peking cotoneaster,   redosier dogwood,   sargent crabapple 	American   cranberrybush,   American plum,   common lilac	  Blue spruce,   Russian-olive     	Norway spruce,   common hackberry,   jack pine, paper   birch, green ash,   red pine, Siberian   elm	  Eastern cottonwood,   Siouxland   cottonwood 
W: Water.		   	 	   	   	 

Table 11.--Windbreak Suitability Groups

(Suitable shrubs and trees with their mature heights are listed in table 10. Absence of an entry indicates that a windbreak suitability group is not assigned.)

Map symbol and component name	Percent of map unit	   Windbreak   suitability   group
47: Colvin	85	   2K
Bearden	5	1
Grano	5	2K
Sax	5	10
48B: Hiwood	85	7
Redby	7	1
Clearriver	3	7
Cormant	3	2
Zimmerman	2	7
52: Augsburg	85	2K
Croke	5	1
Grano	5	2K
Sago	5	10
59: Grimstad	85	1K
Strathcona	12	2K
Foxhome	3	6G
64: Ulen	85	1K
Rosewood	10	2K
Redby	3	   1
Rushlake	2	1   1
65: Foxhome	85	     6G
Strandquist	12	   2K
Skagen	3	   1K
67: Bearden	85	1
Colvin	15	   2K

Table 11.--Windbreak Suitability Groups--Continued

Map symbol and	Percent of	Windbreak suitability
component name	map unit	group
77:		
Garnes	85	1
Chilgren	10	2
Eckvoll	3	1
Pelan	2	5
111:		
Hangaard	90	2K
Deerwood	5	10
Rushlake	3	1
Rosewood	2	2K
116: Redby	85	1
Cormant	8	2
Hiwood	6	7
Leafriver	1	10
117: Cormant	85	2
Leafriver	7	10
Epoufette	3	2
Redby	3	1
Grygla, depressional	2	10
133: Dalbo	85	4
Mustinka	10	2
Moranville	5	1
145:		
Enstrom	85	1
Grygla	10	2
Redby	4	1
Pelan	1	5
147: Spooner	85	2
Baudette	5	3
Grygla	5	2
Sago	5	10

Table 11.--Windbreak Suitability Groups--Continued

Map symbol and	Percent of	Windbreak suitability
component name	map unit	group
158B: Zimmerman	85	7
Hiwood	6	7
Two Inlets	6	7
Redby	3	1
167B: Baudette	85	3
Spooner	10	2
Moranville	5	1
187:		
Haug	90	10
Percy	5	2K
Cathro	3	10
Boash	2	2K
191:		
Epoufette		2
Cormant		2
Leafriver	5	10
Meehan	5	1
202: Meehan	85	1
Cormant	8	2
Wurtsmith	5	7
Leafriver	2	10
205:		
Karlstad	85	1
Sahkahtay	7	2
Marquette	5	7
Redby	2	1
Pits, gravel	1	
242B: Marquette	85	7
Karlstad	14	1
Pits, gravel	1	

Table 11.--Windbreak Suitability Groups--Continued

Map symbol and	Percent of	Windbreak suitability
component name	map unit	group
200		
280: Pelan	85	5
Strandquist	10	2K
Garnes	3	1
Marquette	1	7
Pits, gravel	1	
379: Percy, very cobbly	90	214
Boash	3	2K
Strandquist	3	2K
Haug	2	10
Skagen, very cobbly	2	1K
383:		0.77
Percy		2K 2K
Strandquist		2K
Haug		10
Skagen		16
384: Percy, depressional	85	10
Haug	7	10
Percy	5	2K
Boash	3	2κ
387: Roliss, depressional	85	10
Haug	10	10
Roliss	5	2K
404:		
Chilgren	85	2
Garnes	5	1
Grygla	5	2
Haug	5	10
412:	İ	
Mavie	85	2Κ
Foxhome	5	6G

Table 11.--Windbreak Suitability Groups--Continued

Map symbol	Percent	Windbreak
and	of	suitability
component name	map unit	group
412:		
Northwood	5	10
	_	
Percy, very cobbly	5	2K
400		
432:		   2K
Strandquist	85	2K
Percy, very cobbly	l   5	   2K
reicy, very cobbly	J	
Haug	   4	10
Boash	,   3	2K
Foxhome	3	6G
433:		
Syrene, depressional	85	10
Deerwood	5	10
Rosewood	5	2K
_	_	
Syrene	5	2K
425.	 	
435:	   85	   2K
Syrene	65	<b>2K</b>
Rosewood	   5	2K
1102011004		 
Syrene, depressional	,   5	10
Karlsruhe	3	1
Deerwood	2	10
439:		
Strathcona	85	2K
Northwood	5	10
_	_	
Percy	5	2K
Grimstad	   3	   1K
GI IIIIs cad	] 3 	1K
Strandquist	   2	   <b>2</b> K
beranagarbe	<u>~</u> 	
481:		
Kratka	85	2
Northwood	5	10
Percy	5	2K
Enstrom	3	1
Strandquist	2	2K
	l	

Table 11.--Windbreak Suitability Groups--Continued

Map symbol and	Percent   of	Windbreak suitability
component name	map unit	group
482: Grygla	   85     8	2
Chilgren	   5	2
Grygla, depressional		10
Enstrom	3	1
Northwood	2	10
532: Sago	90	10
Cathro	5	10
Zippel	5     5	2K
534: Mooselake		10
Bullwinkle	4	10
Dora	   3	10
Tawas	3     3	10
540: Seelyeville		10
Cathro	4	10
Dora	3     3	10
Markey	3     3	10
541:		
Rifle	90	10
Tacoosh	10	10
543: Markey	90	10
Cormant	   5   	2
Seelyeville		10
544: Cathro	90	10
Percy, very cobbly	4	2K
Grygla	3	2
Seelyeville	3	10
546: Lupton		10
Bullwinkle		10
Dora	   3   	10
l	ı	

Table 11.--Windbreak Suitability Groups--Continued

Map symbol and	Percent of	Windbreak suitability
component name	map unit	group
546: Tawas	   3   	10
547: Deerwood	   90   	10
Markey	4	10
Rosewood	3	2K
Syrene	3	2K
550:		
Dora	90 	10
Boash	<b>4</b> 	2K
Seelyeville	3	10
Woodslake	3	10
561:		
Bullwinkle	İ	10
Lupton	İ	10
Northwood, wooded	į į	10
Chilgren	2	2
563:	l I	
Northwood	   90 	10
Grygla	   4 	2
Berner	   3 	10
Strandquist	   3 	2K
565: Eckvoll	     85	1
Chilgren	5	2
Grygla		2
Hiwood		7
	, , , , , , , , , , , , , , , , , , ,	,
568: Zippel	     85	2K
Augsburg, depressional	į į	10
Sago	5	10
Skime	5	1
	l i	
569: Wabanica	85	2K
Warroad	6	2
Sax	4	10

Table 11.--Windbreak Suitability Groups--Continued

Map symbol and	Percent of	Windbreak suitability
component name	map unit	group
569: Grano	3	2Κ
Enstrom	2	1
570:		
Faunce	85	7
Clearriver	7	7
Zimmerman		7
Meehan		1
Pits, gravel	1	
581: Percy	90	214
Haug	5	10
Boash	3	216
Skagen	2	1K
582:	į	
Roliss		2K
Roliss, depressional		10
Boash	5	2K
Haug	3	10
583:		
Nereson	85	1
Percy	10	2K
Pelan	3	5
Foxhome	2	6G
627:		
Tawas	İ	10
Leafriver	į	10
Lupton		10
Cormant	2	2
630: Wildwood	90	10
Boash	4	2K
Dora	4	10
Espelie	2	2

Table 11.--Windbreak Suitability Groups--Continued

Map symbol and	Percent of	Windbreak suitability
component name	map unit	group
643: Huot	85	1K
Thiefriver	12	2K
Redby	3	1
644: Boash	85	2K
Percy	7	2K
Woodslake	5	10
Strandquist	3	2K
645:		
Espelie	85	2
Grano	5	2K
Hilaire	5	1
Wildwood	5	10
651: Thiefriver	85	2K
Grano	5	2K
Huot	5	1K
Wildwood	5	10
708: Rushlake	85	1
Corliss	6	7
Redby	5	1
Hangaard	3	2K
Pits, gravel	1	
712:		
Rosewood	85	2K
Deerwood	6	10
Hangaard	5	2K
Ulen	4	1K
721B: Corliss	85	7
Rushlake	10	1
Hangaard	4	2K
Pits, gravel	1	

Table 11.--Windbreak Suitability Groups--Continued

Map symbol and	Percent   of	Windbreak suitability
component name	map unit	group
733: Berner	   90   	10
Grygla	5     5	2
Seelyeville	5	10
737: Mahkonce	   85 	4
Auganaush	10	2
Eckvoll	   5	1
755:	 	
Woodslake	   85 	10
Boash	   8   	2K
Wildwood	5     5	10
Dora	2	10
767:	j i	
Auganaush	90	2
Mustinka	5	2
Wildwood	3	10
Mahkonce	2	4
794: Clearriver	85	7
Hiwood	   7	7
Meehan	   5	1
Faunce	3	7
1002:		
Fluvaquents, frequently flooded	90	10
Seelyeville	   6	10
Hapludalfs	2	3
Water	2	
1030.	 	
1030: Pits, gravel	   75	
Udipsamments	   20   	
Corliss	2     2	7
Karlstad	2     2	1
Hangaard	   1   	2Κ
	'	

Table 11.--Windbreak Suitability Groups--Continued

Map symbol and	Percent of	Windbreak suitability
component name	map unit	group
1031: Seelyeville, ponded	90	10
Cathro	4	10
Dora	3	10
Markey	3	10
1067:		
Fluvaquents,		
frequently flooded	60 	10
Hapludalfs	30	3
Seelyeville	5	10
Water	5	
1133B:		
Skime	85	1
Hiwood	10 	7
Zippel	5	2K
1134:	İ	
Borup	55	2 K
Glyndon	35	1K
Augsburg, depressional	5	10
Skime	5	1
1144:		
Strathcona,		
depressional	45	10 
Kratka, depressional	45	10
Kratka	5	2
Northwood	5	10
1154:		
Sax	90	10
Wabanica	5	2K
Cathro	3	10
Woodslake	2	10
1158:	 	
Skagen	   85 	1K
Percy	10	2K
Foxhome	   5	6G
	I	

Table 11.--Windbreak Suitability Groups--Continued

	I	
Map symbol and	Percent of	Windbreak suitability
component name	map unit	group
1170:	1	
Skagen, very cobbly	   85 	1K
Percy, very cobbly	10	2K
Foxhome	5	6G
1179B: Moranville	   85	1
Baudette	   5 	3
Hiwood	5	7
Spooner	5	2
1181: Rosewood	50	2K
Ulen	   40 	1K
Redby	   5 	1
Deerwood	3	10
Syrene	2	2K
1182: Warroad	   85	2
Wabanica	   7 	2K
Enstrom	   5 	1
Sax	   3 	10
1187:		
Dora, ponded	90	10
Seelyeville, ponded	<b>4</b> 	10
Wildwood		10
Boash	2	2K
1191: Sahkahtay	85	2
Cormant	   5 	2
Deerwood	   5 	10
Karlstad	   3 	1
Redby	   2 	1
1206:	 	
Cormant	   55 	2
Redby	35	1
Hiwood	5	7
Leafriver	5	10
•		

Table 11.--Windbreak Suitability Groups--Continued

Map symbol   and	Percent   of	Windbreak suitability
component name	map unit	group
ļ		
1214:   Mustinka	90	2
Espelie	4	2
Wildwood	4	10
Dalbo	2	4
1274B:   Redby	40	1
Hiwood	30	7
Leafriver, wooded	15	10
Clearriver	5   	7
Cormant	5	2
  Zimmerman  	5   	7
1298:		
Borup	90	2K
Augsburg, depressional	3	10
Glyndon	3	1K
Sago	2	10
Skime	2	1
1302:   Foldahl	85   	1
   Kratka	10	2
Foxhome	5	6G
1304:   Glyndon	85	1K
   Borup	10	2K
     Skime	5	1
j		-
1305:     Hilaire	85   	1
Espelie	11	2
   Grano  	2	2K
Redby	2	1
1314:   Tacoosh	90	10
   Rifle	8	10
   Sax	2	10

Table 11.--Windbreak Suitability Groups--Continued

Map symbol and	Percent     of	Windbreak suitability
component name	map unit	group
1316:		1K
Augsburg	İ	2K
Grano	2	2K
1326: Augsburg, depressional	     45	10
Wabanica, depressional	45	10
Sax	   6   	10
Espelie	2	2
Zippel	2	2K
1327B: Karlstad	65	1
Marquette	25     25	7
Sahkahtay	7     7	2
Redby	3	1
1328: Northwood, wooded	   90	10
Berner, wooded	5     5	10
Grygla	5	2
1333: Dora, wooded	90	10
Lupton	   4   	10
Wildwood	4     4	10
Auganaush	2	2
1356: Water, miscellaneous.		
1399B: Two Inlets	 	7
Wurtsmith	6	7
Zimmerman	   6	7
Meehan	   3   	1
1401: Grygla, depressional	90	10
Northwood, wooded	   5	10
Chilgren	3     3	2
Grygla	2     2	2
	,	

Table 11.--Windbreak Suitability Groups--Continued

Map symbol	Percent	Windbreak
and	of	suitability
component name	map unit	group
1402:		
Leafriver, wooded	90	10
Cormant	4	2
Tawas	4	10
Redby	2	1
-		
1404:		
Berner, wooded	90	10
Lupton	4	10
_		
Northwood, wooded	4	10
Grygla	2	2
1405:		
Lallie	90	10
Sax	7	10
Wabanica	3	2K
1414:		
Nereson, very cobbly	85	1
Percy, very cobbly	10	2K
Pelan	3	5
Foxhome	2	6G
1428:		
Karlsruhe	85	1
Syrene	10	2 K
Ulen	5	1K
1444:		
Wurtsmith	85	7
Meehan	10	1
Clearriver	2	7
Two Inlets	2	7
Cormant	1	2
1448:		
Grano	90	2K
Percy	5	2K
Augsburg	3	2K
Woodslake	2	10

Table 11.--Windbreak Suitability Groups--Continued

Man gymbol	Domaont	Windham
Map symbol and	Percent of	Windbreak suitability
component name	map unit	group
	map and	3-025
1449:		
Grano	90	2K
Percy	5	2K
Augsburg	3	2K
Augsburg	, s	21
Woodslake	2	10
İ	İ	
1807:		
Cathro, ponded	90	10
Haug	4	10
naug		10
Seelyeville, ponded	4	10
į	İ	
Percy	2	2K
1808: Markey, ponded	0.0	10
markey, ponded	90	10
Leafriver	4	10
Seelyeville, ponded	4	10
Cormant	2	2
1918:		
Croke	85	1
		<del>-</del>
Augsburg	13	2K
Grano	2	2K
1923B:		
Garnes, very stony	85	1
0011102, 1017 20017		<del>-</del>
Chilgren	10	2
İ	İ	
Eckvoll	3	1
Pelan	2	5
retail	<b>4</b>	<b>5</b>
1984:		
Leafriver	90	10
Cormant	5	2
Markey	3	10
markey	<b>3</b>	10
Redby	2	1
-		
W:		
Water.		

Table 12.--Forest Productivity

(Only the soils that support vegetation suitable for forest land management are listed. Absence of an entry indicates that no rating is applicable.)

		Potential prod			
Map symbol and	Component	:			<u> </u>
component name	percent	Common trees	Site		Trees to manage
			index	of wood	
				fiber	
		İ	 	cu ft/ac	 
48B:				 	
Hiwood	85	Balsam fir	:	115	Eastern white pine
		Jack pine	:	85	jack pine, red
	!	Paper birch	:	49	pine, white spruce
		Quaking aspen		64	!
	 	Red pine   White spruce	:	115   96	 
Redby	7	Balsam fir	55	114	Jack pine, red
		Jack pine	55	72	pine, white spruce
		Paper birch	55	57	
		Quaking aspen	:	72	
	ļ.	Red pine		100	
	 	White spruce	55 	100 	 
Clearriver	3	  Balsam fir	55	114	  Eastern white pine,
		Jack pine	55	72	jack pine, red
		Quaking aspen	60	72	pine, white spruce
		Red pine	65	114	
		White spruce	50	100	 
Cormant	3	  Balsam fir	50	100	Black ash, black
	ĺ	Black ash	45	29	spruce, green ash
		Black spruce	45	43	
		Quaking aspen	60	72	
Zimmerman	2	  Balsam fir	50	100	  Eastern white pine,
	ĺ	Jack pine	50	72	jack pine, red
	ĺ	Quaking aspen	55	53	pine
		Red pine	55	86	
54:	 	 	 	 	 
Ulen	85				
Rosewood	1 10	 		 	 
Redby	3	  Balsam fir	55	   114	  Jack pine, red
	ĺ	Jack pine	55	72	pine, white spruce
		Paper birch	55	57	
		Quaking aspen	60	72	
		Red pine	60	100	
		White spruce	55	100	
Rushlake	   2	  Bur oak	40	   29	  Bur oak, jack pine
	İ	Jack pine	:	72	red pine, white
	İ	Quaking aspen	60	72	spruce
		Red pine	65	114	
77:	 	 		 	 
Garnes	85	Balsam fir	65	129	Bur oak, eastern
	į	Black ash	55	29	white pine, green
	İ	Bur oak		43	ash, red pine,
		Paper birch		72	white spruce
		the state of the s	70	86	I .
		Quaking aspen	/ / /	00	
	 	Quaking aspen  Red pine	:	100	 

Table 12.--Forest Productivity--Continued

Map symbol and	Component		I		I
component name	percent	Common trees	'	Volume  of wood   fiber	Trees to manage
	l	<u> </u>	<u> </u>	cu ft/ac	<u> </u>
77:					
Chilgren	10	Balsam fir	!	114	Black ash, black
	 	Black ash   Paper birch	'	29   72	spruce, white   spruce
	İ	Quaking aspen	!	72	
		White spruce	55	100	
Eckvoll	   3	  Balsam fir	   60	   114	  Bur oak, eastern
	İ	Bur oak	'	43	white pine, red
	İ	Paper birch	60	72	pine, white spruce
		Quaking aspen		72	
		Red pine		114   114	 
	 	White spruce	60 	114	 
Pelan	2	Bur oak	50	29	Bur oak, red pine
	<u> </u>	Quaking aspen	!	57	[
	 	Red pine	60 	100	 
111:					
Hangaard	90				
Deerwood	   5	 	 	 	 
	į			İ	
Rushlake	3	Bur oak   Jack pine		29   72	Bur oak, jack pine   red pine, white
	 	Quaking aspen		72	spruce
		Red pine		114	
Rosewood	2		 	 	 
116:	 		 	 	
Redby	85	Balsam fir	55	114	Jack pine, red
		Jack pine		72	pine, white spruce
		Paper birch		57	 
	 	Quaking aspen   Red pine		72   100	 
		White spruce		100	
Cormant	8	Balsam fir   Black ash	!	100   29	Black ash, black spruce, green ash
	 	Black spruce	'	43	spidce, green asn 
	İ	Quaking aspen	!	72	
Hiwood	   6	  Balsam fir	   55	   115	 
HIWOODI	6	Jack pine		85	Eastern white pine   jack pine, red
		Paper birch		49	pine, white spruce
	į	Quaking aspen	60	64	· -
		Red pine		115	
	 	White spruce	50 	96 	 
Leafriver	1				
117:	 	 	 	 	 
Cormant	85	Balsam fir	50	100	Black ash, black
	İ	Black ash		29	spruce, green ash
		Black spruce		43	
	 	Quaking aspen	60	72	 
Leafriver	   7		 	 	 
	i	i	i	i	i I

Table 12.--Forest Productivity--Continued

Map symbol and	Potential productivity				 
component name	percent	   Common trees 		Volume  of wood   fiber	   Trees to manage   
		 	 	cu ft/ac	 
117:		 		 	 
Epoufette	3	Balsam fir		100	Black ash, black
	 	Black ash		14   43	spruce 
	İ		İ	İ	İ
Redby	3	Balsam fir		114	Jack pine, red
	 	Jack pine   Paper birch		72   57	pine, white spruce
	İ	Quaking aspen		!	
	[	Red pine		:	!
	 	White spruce	55 	100 	 
Grygla, depressional	2	Black ash	40	14	Black ash, black
		Black spruce		!	spruce
	 	Quaking aspen	40 	29 	 
133:	İ		į		
Dalbo	85	Balsam fir   Black ash		129	Bur oak, green ash,
	 	Bur oak	!	29 43	white spruce
	İ	Paper birch		72	
		Quaking aspen	70	86	
	 	White spruce	60 	114	 
Mustinka	10	 	 	 	 I
Moranville	5	  Balsam fir	60	114	  Bur oak, eastern
		Bur oak		43	white pine, red
		Paper birch		!	pine, white spruce
	 	Quaking aspen  Red pine		86 100	 
	į	White spruce		114	
145:	 		 	 	 
Enstrom	85	Balsam fir	60	114	Eastern white pine,
		Bur oak		43	jack pine, red
		Quaking aspen		72   114	pine
		Red pine  White spruce		100	 
Grygla	   10	  Balsam fir	   60	   114	  Black ash, black
01/914	10	Black ash	50	29	spruce, white
	į	Paper birch		:	spruce
		Quaking aspen	65	72	 
Redby	4	  Balsam fir	   55	114	  Jack pine, red
		Jack pine	55	72	pine, white spruce
		Paper birch		57	
	 	Quaking aspen  Red pine		72 100	 
		White spruce		100	
Pelan	   1	  Bur oak	   50	   29	  Bur oak, red pine
retair	, <u>-</u>	Quaking aspen		57	bur oak, red prine
	İ	Red pine		100	
147:	 	 	 	 	 
Spooner	85	Balsam fir	60	114	Black ash, black
		Black ash		!	spruce, green ash
		Paper birch		72	
	I I	Quaking aspen   White spruce		72 100	 
	I I	unice bbince	1 22	1 100	] 

Table 12.--Forest Productivity--Continued

		Potential produ	uctivi	ty	
Map symbol and component name	Component   percent 	Common trees	  Site  index	Volume	   Trees to manage 
				fiber	
				cu ft/ac	
147:	 	 	 	 	 
Baudette	5	Balsam fir	65	129	Bur oak, eastern
	ĺ	Bur oak	60	43	white pine, green
		Paper birch	65	72	ash, red pine,
		Quaking aspen	'	86	white spruce
		Red pine		100	
		White spruce	60	114	l
Grygla	   5	  Balsam fir	   60	   114	  Black ash, black
01/914		Black ash		29	spruce, white
	İ	Paper birch	!	72	spruce
		Quaking aspen		72	
		İ	ĺ		
Sago	5   	     	     	     	Black ash, eastern   arborvitae,   tamarack
158B:	İ		İ	İ	
Zimmerman	85	Balsam fir	!	100	Eastern white pine,
		Jack pine		72	jack pine, red
		Quaking aspen		53	pine
		Red pine	55 	86 	 
Hiwood	   6	  Balsam fir	   55	   115	  Eastern white pine,
11,000		Jack pine		85	jack pine, red
		Paper birch		49	pine, white spruce
	İ	Quaking aspen		64	<b> </b>
	İ	Red pine		115	
		White spruce	50	96	
Two Inlets	   6	  Balsam fir	   50	   100	  Eastern white pine,
IWO INTECS	0	Jack pine	'	72	jack pine, red
	 	Quaking aspen		!	pine
		Red pine		!	
Redby	3	Balsam fir		114	Jack pine, red
		Jack pine		72	pine, white spruce
	 	Paper birch   Quaking aspen		57   72	 
	 	Red pine		100	 
		White spruce	!	100	
	İ	İ	İ	İ	
167B:		 		100	   Door
Baudette	85	Balsam fir  Bur oak		129   43	Bur oak, eastern white pine, green
	 	Paper birch	'	43   72	ash, red pine,
	 	Quaking aspen	!	86	white spruce
		Red pine	'	100	
		White spruce		114	
			ļ		
Spooner	10	Balsam fir	!	114	Black ash, black
	 	Black ash   Paper birch	'	29   72	spruce, green ash
	 	Paper birch   Quaking aspen	!	72   72	 
		White spruce		100	
	İ	- 	İ	ĺ	
Moranville	5	Balsam fir	'	114	Bur oak, eastern
		Bur oak		43	white pine, red
		Paper birch		72	pine, white spruce
		Quaking aspen	'	86	 
	 	Red pine		100   114	 
	I	White spruce	. 00	1	1

Table 12.--Forest Productivity--Continued

		Potential produ	uctivi	ty	
Map symbol and component name	Component   percent 	Common trees		   Volume  of wood	   Trees to manage 
				fiber	
		 	 	cu ft/ac	l I
191:		 	 	 	 
Epoufette	85	Balsam fir	50	100	Black ash, black
		Black ash	!	14	spruce
		Quaking aspen	50	43	
Cormant	   5	  Balsam fir	   50	100	  Black ash, black
00-1101-0		Black ash		!	spruce, green ash
	İ	Black spruce	45	43	
		Quaking aspen	60	72	
Leafriver	   5	 	 	 	 
Leali I Vei	5				
Meehan	5	Balsam fir	55	114	Eastern white pine,
		Jack pine	'	72	jack pine, red
		Paper birch	!	:	pine, white spruce
		Quaking aspen   Red pine		!	 
		ked pine	60 	100 	 
202:			İ	İ	
Meehan	85	Balsam fir	55	114	Eastern white pine,
	!	Jack pine		!	jack pine, red
		Paper birch		57	pine, white spruce
	 	Quaking aspen  Red pine		:	 
				100	
Cormant	8	Balsam fir	50	100	Black ash, black
		Black ash		29	spruce, green ash
		Black spruce		!	 
		Quaking aspen	60 	<i>12</i> 	 
Wurtsmith	5	Balsam fir	55	114	Eastern white pine,
		Jack pine	60	86	jack pine, red
		Quaking aspen		:	pine, white spruce
		Red pine   White spruce		114   100	 
		white spidce	30	100	 
Leafriver	2				
205:		   December 1			 
Karlstad	85 	Bur oak   Quaking aspen	!	29   57	Bur oak, eastern   white pine, red
		Red pine		!	pine, white spruce
		İ	ĺ		İ
Sahkahtay	7	Balsam fir			Black ash, black
		Black ash		!	spruce
		Quaring aspen	30	43	 
Marquette	5	Bur oak	40	29	Bur oak, red pine
		Quaking aspen		!	
	 	Red pine	55	86 	 
Redby	2	  Balsam fir	   55	   114	  Jack pine, red
· •	<u> </u>	Jack pine		!	pine, white spruce
		Paper birch		57	
		Quaking aspen		!	
		Red pine		:	 
	 	White spruce	55 	100 	[ 
Pits, gravel	   1 	 	   	   	 

Table 12.--Forest Productivity--Continued

		Potential prod	uctivi		
Map symbol and component name	Component   percent	Common trees	  Site	   Volume	Trees to manage
	percent		:	of wood	
	l	<u> </u>	1	fiber cu ft/ac	<u> </u>
	 	 		Cu It/ac	 
242B:			į	į	į
Marquette	85	Bur oak   Quaking aspen		29 43	Bur oak, red pine
	! 	Red pine	55	86	
Karlstad	14 	Bur oak	:	29   57	Bur oak, eastern white pine, red
		Red pine	60	100	pine, white spruce
Pits, gravel	   1		 	 	
280:	 	 		 	 
Pelan	85	Bur oak	50	29	Bur oak, red pine
	j	Quaking aspen	55	57	_
	 	Red pine	60	100	
Strandquist	   10	 		 	 
Garnes	   3	  Balsam fir	65	129	Bur oak, eastern
	j	Black ash	55	29	white pine, green
		Bur oak	:	43	ash, red pine,
		Paper birch		72	white spruce
	 	Quaking aspen		86   100	 
	 	Red pine   White spruce	:	1114	 
Marquette	1	Bur oak		29	Bur oak, red pine
	 	Quaking aspen  Red pine	50   55	43   86	
Pits, gravel	   1		 	 	
404:	 	 	 	 	 
Chilgren	85	Balsam fir	60	114	Black ash, black
		Black ash	50	29	spruce, white
		Paper birch		72	spruce
	 	Quaking aspen   White spruce	65   55	72   100	 
	! 		33	100	
Garnes	5	Balsam fir	:	129	Bur oak, eastern
		Black ash	55	29	white pine, green
	 	Bur oak   Paper birch	60   65	43   72	ash, red pine, white spruce
	 	Quaking aspen		86	white spide
		Red pine		100	
	 	White spruce	60	114	  -
Grygla	5	  Balsam fir	60	114	  Black ash, black
		Black ash	:	29	spruce, white
	 	Paper birch   Quaking aspen		72   72	spruce
Haug	     5				 
-			į	į	į
481: Kratka	   <b>0</b> F	 	 	 	 
WIGHT	85 				 
Northwood	5 	 	i i	i	 
Percy	5   5		i	   	
	I	I .	I	I	I

Table 12.--Forest Productivity--Continued

		Potential prod	uctivi	ty	
Map symbol and component name	Component   percent 	   Common trees   		   Volume  of wood   fiber	   Trees to manage   
	[	<u> </u>		cu ft/ac	
481:		 	 	 	 
Enstrom	.   3	Balsam fir	60	114	Eastern white pine,
		Bur oak		43	jack pine, red
		Quaking aspen		72	pine
		Red pine   White spruce		114	
Strandquist	 ·  2		 	 	
482:		 	 	 	 
Grygla	85	Balsam fir	60	114	Black ash, black
	İ	Black ash	50	29	spruce, white
		Paper birch  Quaking aspen		72 72	spruce
			65	/2	 
Chilgren	. 5	Balsam fir	60	114	Black ash, black
	1	Black ash		29	spruce, white
		Paper birch		72	spruce
		Quaking aspen   White spruce		72   100	 
	İ	į	İ	İ	İ
Grygla, depressional	.   5	Black ash		14	Black ash, black
		Black spruce   Quaking aspen		43   29	spruce 
To observe		 			 
Enstrom	.   3	Balsam fir   Bur oak		114   43	Eastern white pine,   jack pine, red
	I I	Quaking aspen		72	pine
	i	Red pine		114	
	į	White spruce	55	100	  -
Northwood	.   2	 	 	 	 
534:		 	 	 	 
Mooselake	90	Black ash	40	14	Black ash, black
		Black spruce	35	43	spruce, tamarack
		Eastern arborvitae		36	
		Tamarack	35 	43	 
Bullwinkle	. 4	Black ash	45	29	Black spruce,
		Black spruce		43	eastern
		Eastern arborvitae	1	43	arborvitae,
		Tamarack	40 	29 	tamarack
Dora	. 3	Black ash	45	29	Black ash, black
		Black spruce		43	spruce, eastern
		Eastern arborvitae		43	arborvitae,
		Tamarack	40 	29 	tamarack
Tawas	. 3	Black ash	45	29	Black spruce,
		Black spruce		43	eastern
		Eastern arborvitae  Tamarack		43 29	arborvitae, tamarack
E41.	į		į	İ	  -
541: Rifle	  -   90	 	 	 	  Black spruce,
	j	į	į	į	eastern
					arborvitae,
	1	I	1	1	tamarack

Table 12.--Forest Productivity--Continued

		Potential prod	uctivi	ty	
Map symbol and component name	Component   percent	Common trees		Volume	Trees to manage
		<u> </u> 	   	fiber  cu ft/ac	<u> </u> 
541:	! 	 	 	 	 
Tacoosh	10   	Black ash   Black spruce   Tamarack	40	29   43   29	Black ash, black spruce, tamarack
	į	į	į	į	
543: Markey	90	 	 	 	 
Cormant	5	  Balsam fir	50	100	Black ash, black
	į	Black ash	45	29	spruce, green ash
	[	Black spruce	45	43	
		Quaking aspen	60	72	l
Seelyeville	   5 	 	 	 	 
544:				! 	 
Cathro	90	 	   	i I	 
Percy, very cobbly	4	 	i I		 
Grygla	3	Balsam fir	60	114	Black ash, black
	[	Black ash		29	spruce, white
	ļ	Paper birch		72	spruce
		Quaking aspen	65	72	  -
Seelyeville	   3	 		 	 
546:	 			 	
Lupton	90	Black ash	40	14	Black ash, black
	ĺ	Black spruce	35	43	spruce, tamarack
	ļ	Eastern arborvitae		36	
		Tamarack	35	43	l
Bullwinkle	4	Black ash	45	   29	  Black spruce,
	i	Black spruce	:	43	eastern
	Ì	Eastern arborvitae		43	arborvitae,
		Tamarack	40	29	tamarack
Dora	3	  Black ash	   45	   29	  Black ash, black
	i	Black spruce	:	43	spruce, eastern
	Ì	Eastern arborvitae		43	arborvitae,
		Tamarack	40	29	tamarack
Tawas	3	Black ash	   45	   29	  Black spruce,
	i	Black spruce	:	43	eastern
	İ	Eastern arborvitae	30	43	arborvitae,
	 	Tamarack	40 	29 	tamarack 
561:					
Bullwinkle	90	Black ash	!	29	Black spruce,   eastern
	l I	Black spruce   Eastern arborvitae			arborvitae,
		Tamarack		43   29	tamarack
Lupton	4	  Black ash	40	   14	  Black ash, black
· <u>w</u>	i	Black spruce		43	spruce, tamarack
	į	Eastern arborvitae		36	_
	[	Tamarack	35	43	

Table 12.--Forest Productivity--Continued

		Potential prod	uctivi	ty	
Map symbol and component name	Component   percent 	Common trees	  Site  index	Volume of wood	   Trees to manage   
	İ	Ī	İ	cu ft/ac	Ī
561:					
Northwood, wooded	   4	  Black ash	   45	   29	  Black ash, black
	i -	Black spruce	!	43	spruce, eastern
	j	Eastern arborvitae	30	43	arborvitae,
		Tamarack	40	29	tamarack
Chilgren	   2	  Balsam fir	   60	   114	  Black ash, black
cmiigiem	2	Black ash	1	!	spruce, white
	į	Paper birch		72	spruce
		Quaking aspen		72	
		White spruce	55	100	
563: Northwood	     90	   	   	   	   
	į	İ	į	İ	İ
Grygla	4	Balsam fir	1	114	Black ash, black
		Black ash		!	spruce, white
	 	Paper birch   Quaking aspen	60   65	!	spruce
		Quaking aspen	03	72	 
Berner	3 	 	i i	i I	 
Strandquist	3				
565:		 		 	 
Eckvoll	   85	  Balsam fir	   60	   114	Bur oak, eastern
		Bur oak	1	!	white pine, red
	į	Paper birch	60	72	pine, white spruce
		Quaking aspen		!	[
		Red pine   White spruce		!	l
		white spidee	00	111	 
Chilgren	5	Balsam fir	60	114	Black ash, black
	1	Black ash		!	spruce, white
		Paper birch		!	spruce
	 	Quaking aspen   White spruce		72   100	 
				=00	
Grygla	5	Balsam fir	60	114	Black ash, black
		Black ash		!	spruce, white
		Paper birch   Quaking aspen	60   65	72   72	spruce
	 	Quaking aspen	65	/2	 
Hiwood	5	Balsam fir	55	115	Eastern white pine,
		Jack pine		85	jack pine, red
	ļ	Paper birch	:	!	pine, white spruce
		Quaking aspen		!	 
	 	Red pine   White spruce		!	 
569: Wabanica	   85	 	 	 	 
Warroad	   6		 	 	
Sax	   4	 	   <b>-</b>	 	  Rlack ach eactern
Dan	**   	   	   		Black ash, eastern   arborvitae,   tamarack
	İ	İ	į	İ	İ
Grano	3				
	I	I	I	I	I

Table 12.--Forest Productivity--Continued

		Potential produ	uctivi	ty	
Map symbol and	Component				
component name	percent	Common trees	Site	Volume	Trees to manage
			index	of wood	
			<u> </u>	fiber	
	!		!	cu ft/ac	
ECO:					 
569:	2	  Bolsom fin		114	  Eastern white nine
Enstrom	4	Balsam fir   Bur oak	:	114   43	Eastern white pine,
	I I	Quaking aspen	!	43   72	jack pine, red   pine
	1	Red pine	:	114	pine
	i	White spruce	:	100	 
	İ	<u> </u>	i		
570:					
Faunce	85	Balsam fir	50	100	Eastern white pine,
		Jack pine	50	72	jack pine, red
	!	Quaking aspen	:	57	pine
		Red pine	55	86	
Clearriver	1 7	  Balsam fir	   55	   114	  Eastern white pine,
		Jack pine	:	72	jack pine, red
	i	Quaking aspen	:	72	pine, white spruce
		Red pine		114	
	i	White spruce	:	100	
	į	į	į	İ	İ
Zimmerman	4	Balsam fir	50	100	Eastern white pine,
		Jack pine	50	72	jack pine, red
		Quaking aspen	55	53	pine
		Red pine	55	86	
Meehan	3	  Balsam fir	   55	   114	  Eastern white pine,
Meenan	3	Jack pine	:	72	jack pine, red
	i	Paper birch	:	57	pine, white spruce
	i	Quaking aspen	:	72	
	İ	Red pine	:	100	
Pits, gravel	1	 			 
583:	1	 		 	 
Nereson	85	Bur oak	60	43	Bur oak, eastern
	i	Quaking aspen		86	white pine, red
	İ	Red pine	:	86	pine, white spruce
		İ	İ		İ
Percy	10				
Pelan	3	   Burn cole	   50	   29	   Bum only mod mino
retaii	]	Bur oak   Quaking aspen		57	Bur oak, red pine
	I I	Red pine	:	100	 
	i			=00	 
Foxhome	2		i	i	
627:					
Tawas	90	Black ash	1	29	Black spruce,
		Black spruce	1	43	eastern
	!	Eastern arborvitae	1	43	arborvitae,
		Tamarack	40	29	tamarack
Leafriver	4	  Black ash	   45	   29	  Black ash, black
Teatification Action and Action Actio	**	Black asn	1	29	spruce, eastern
		Eastern arborvitae	!	43	arborvitae,
		Tamarack		29	tamarack
	İ	İ	İ	İ	İ
Lupton	4	Black ash	40	14	Black ash, black
		Black spruce	35	43	spruce, tamarack
		i .			
		Eastern arborvitae		36   43	

Table 12.--Forest Productivity--Continued

		Potential productivity				
Map symbol and component name	Component   percent	Common trees	Site		Trees to manage	
		 	index	of wood fiber	l	
	1	<u> </u>	<u> </u>	cu ft/ac	1	
			i			
627:	į	İ	İ	İ		
Cormant	2	Balsam fir		100	Black ash, black	
		Black ash		29 43	spruce, green ash	
	 	Black spruce Quaking aspen		43   72	 	
				, , <u>-</u>		
630:		İ	ĺ		İ	
Wildwood	90	Black ash		29	Black ash, black	
	 	Black spruce   Eastern arborvitae		43	spruce, tamarack	
		Tamarack		29		
	İ		i	j		
Boash	4					
Dora	   4	 	 	 	 	
DOTA	<del>*</del> 	 		 	 	
Espelie	2		i			
		[	[			
643: Huot		  -			1	
Huot	85 	 		 	 	
Thiefriver	12		i			
	İ	İ	İ	İ	İ	
Redby	3	Balsam fir		114	Jack pine, red	
	1	Jack pine   Paper birch		72   57	pine, white spruce	
		Quaking aspen		57   72	 	
	İ	Red pine		100		
	į	White spruce		100		
			ļ			
645: Espelie	   85	 	 	 	 	
Espeile	65	 		 	 	
Grano	5		i			
			[			
Hilaire	5					
Wildwood	   5	  Black ash	   45	   29	  Black ash, black	
	i	Black spruce		43	spruce, tamarack	
	İ	Eastern arborvitae	30	43		
		Tamarack	40	29		
651:	 	  -	1	 	 	
Thiefriver	85	 	 	 		
	į	İ	i	j		
Grano	5					
Track		  -			1	
Huot	5 	 		 	 	
Wildwood	5	Black ash	45	29	Black ash, black	
		Black spruce	40	43	spruce, tamarack	
	ļ.	Eastern arborvitae		43		
		Tamarack	40	29	 	
708:		 		! 	 	
Rushlake	85	Bur oak	40	29	Bur oak, jack pine,	
		Jack pine	55	72	red pine, white	
		Quaking aspen		72	spruce	
		Red pine	65	114	 	
Corliss	   6	  Bur oak	40	   29	Bur oak, red pine	
	İ	Quaking aspen	45	29	,	

Table 12.--Forest Productivity--Continued

		Potential produ	uctivi	ty	
Map symbol and component name	Component   percent	Common trees	  Site  index	of wood	Trees to manage
	1	l	<u> </u>	fiber cu ft/ac	<u> </u>
	 	 	 	Cu It/ac	 
708:	İ		į	j	
Redby	5	Balsam fir	55	114	Jack pine, red
		Jack pine		72	pine, white spruce
		Paper birch		57	 
	l I	Quaking aspen  Red pine		72   100	 
	I I	White spruce	'	100	 
	i			=00	
Hangaard	3		i	i	
Pits, gravel	1				 
721B:	l I		 	 	 
Corliss	85	Bur oak	40	   29	Bur oak, red pine
COLLEGE	03	Quaking aspen	45	29	
	İ		İ	İ	
Rushlake	10	Bur oak	40	29	Bur oak, jack pine,
		Jack pine	55	72	red pine, white
	!	Quaking aspen	:	72	spruce
	 	Red pine	65 	114 	
Hangaard	<b>4</b>	 I	 	i	 I
Pits, gravel	1				
733:	! [		 	 	
Berner	90				
Grygla	   5	  Balsam fir	   60	   114	  Black ash, black
orygra	İ	Black ash		29	spruce, white
	İ	Paper birch		72	spruce
	į	Quaking aspen	65	72	
Seelyeville	   5 	 	   	 	 
737:	I		 	 	
Mahkonce	85	Balsam fir	65	129	Bur oak, eastern
	ĺ	Black ash	55	29	white pine, green
		Bur oak	60	43	ash, red pine,
	!	Quaking aspen		86	white spruce
		Red pine		100	
	l I	White spruce	60	114	  -
Auganaush	   10	  Balsam fir	   60	   114	  Black ash, black
	10	Black ash	'		spruce, white
	İ	Paper birch	'	!	spruce
	į	Quaking aspen	65	72	-   
Eckvoll	   5	  Balsam fir	   60	1114	Bur oak, eastern
-	1	Bur oak	'	43	white pine, red
		Paper birch	'	72	pine, white spruce
		Quaking aspen		72	
	!	Red pine	!	114	
	 	White spruce	60 	114 	 
755:					
Woodslake	85 	 	 	 	 I
Boash	   8 	 	   	   	 
					1

Table 12.--Forest Productivity--Continued

		Potential produ	uctivi	ty	
Map symbol and	Component				
component name	percent	Common trees	Site	Volume	Trees to manage
			index	of wood	
				fiber	
	!			cu ft/ac	
755:	_				
Wildwood	5	Black ash	:	29	Black ash, black
		Black spruce	:	43	spruce, tamarack
	l I	Eastern arborvitae	:	43 29	İ
	l I	Tamarack	40	29	 
Dora	2		 		
767:	 		 		
Auganaush	   90	  Balsam fir	   60	   114	  Black ash, black
Auganausn	1 30	Black ash		29	spruce, white
	l I	Paper birch		72	spruce, white
	l I	Quaking aspen	:	72	bprace
	İ		i	<del>.</del> .	
Mustinka	,   5		i		
	İ	İ	İ	İ	
Wildwood	3	Black ash	45	29	Black ash, black
	İ	Black spruce	40	43	spruce, tamarack
	j	Eastern arborvitae	30	43	
		Tamarack	40	29	
Mahkonce	2	Balsam fir		129	Bur oak, eastern
		Black ash		29	white pine, green
	!	Bur oak	!	43	ash, red pine,
		Quaking aspen		86	white spruce
		Red pine	:	100	
		White spruce	60	114	1
794:	l I	 	 	 	İ
Clearriver	   85	  Balsam fir	   55	   114	  Eastern white pine,
Clearitver	05	Jack pine	:	72	jack pine, red
	l I	Quaking aspen	:	72	pine, white spruce
	İ	Red pine		114	
	i	White spruce	:	100	
	İ	į	İ	İ	
Hiwood	7	Balsam fir	55	115	Eastern white pine,
		Jack pine	60	85	jack pine, red
	ĺ	Paper birch	50	49	pine, white spruce
		Quaking aspen	60	64	
		Red pine	65	115	
		White spruce	50	96	
•					<u> </u>
Meehan	5	Balsam fir		:	Eastern white pine,
		Jack pine		72	jack pine, red
		Paper birch		57	pine, white spruce
		Quaking aspen		72	l I
	l I	Red pine	60	100	 
Faunce	   3	  Balsam fir	   50	100	  Eastern white pine,
	, J	Jack pine		72	jack pine, red
	İ	Quaking aspen	:	57	pine
	İ	Red pine		86	
	<u> </u>		į	i	
1002:	İ	İ	İ	İ	
Fluvaquents, frequently					
flooded	90		i	i	
Seelyeville	6				
	l				

Table 12.--Forest Productivity--Continued

Man gambal and	Composer	Potential prod	uctivi	<u>Γ</u>	] [
Map symbol and component name	Component   percent	Common trees	  Site	   Volume	Trees to manage
Component name	percent	Common trees		of wood	Trees to manage
	 	I I		fiber	
	l	<u> </u> 	<u> </u>	cu ft/ac	<u> </u>
	 	 			! 
1002:	İ		i	İ	
Hapludalfs	2	Balsam fir	65	129	Bur oak, eastern
		Black ash	55	35	white pine, green
		Bur oak	60	43	ash, red pine,
		Paper birch	65	72	white spruce
		Quaking aspen	70	86	
		Red pine	60	100	
		White spruce	60	114	
Water	   2	 	 	 	 
1030:	 	 	i	 	 
Pits, gravel	   75				
, g			i	! 	
Udipsamments	20	i	i		
			İ	İ	
Corliss	2	Bur oak	40	29	Bur oak, red pine
		Quaking aspen	45	29	
			ļ		
Karlstad	2	Bur oak		29	Bur oak, eastern
		Quaking aspen	1	57	white pine, red
		Red pine	60	100	pine, white spruce
Hangaard	   1	 			
1067:	l I	 	 	 	 
Fluvaquents, frequently	 	I I	i	l I	
flooded	60			 	
1100404	 	 	i	! 	 
Hapludalfs	30	Balsam fir	65	129	Bur oak, eastern
_	İ	Black ash	55	35	white pine, green
	İ	Bur oak	60	43	ash, red pine,
		Paper birch	65	72	white spruce
		Quaking aspen	70	86	
		Red pine	60	100	
		White spruce	60	114	
	_		!		
Seelyeville	5				
Matan	   5	 	 	 	 
Water	<b>5</b>	 		 	<del></del>
L133B:	! 	! 	i I	! 	! 
Skime	85	 		 	
			i		
Hiwood	10	Balsam fir	55	115	Eastern white pine,
		Jack pine		85	jack pine, red
		Paper birch		49	pine, white spruce
		Quaking aspen	60	64	
		Red pine	65	115	
		White spruce	50	96	
72 may 2					
Zippel	5				
11700.	 	 	I	  -	 
1179B: Moranville	   85	  Balsam fir	60	   114	Bur oak oactor
MOT GIIATTIG	63 	Barsam fir   Bur oak		114   43	Bur oak, eastern white pine, red
	 	Paper birch		72	pine, white spruce
	! 	Quaking aspen		86	pinc, mile spide
		Red pine		100	
	İ	White spruce	1	114	
		A			· ·

Table 12.--Forest Productivity--Continued

			Potential prod	uctivi	ty	
1179B:   Balsam fir			•		of wood	   Trees to manage   
Baleam fir					cu ft/ac	
Baleam fir		ĺ		ĺ	į	
Bur oak			   D = 1 ===== 6 ! ==		100	 
Paper birch   65	Baudette	5	1		!	!
Quaking aspen		 	1			
Red pins		İ			!	-
Balsam fir		į			100	<u> </u>
Jack pine			White spruce	60	114	İ
Jack pine		_		ļ		
Paper birch	Hiwood	5	1		!	Eastern white pine,
Quaking aspen		 			!	
Red pine		 				pine, white spidee
Spooner		i			!	 
Black ash		İ	:		96	
Black ash			[		ļ	
Paper birch	Spooner	5		!	!	Black ash, black
Quaking aspen						spruce, green ash
White spruce		 				  -
1181:  Rosewood		 			!	 
Rosewood		i			200	
Machine	1181:	į	İ	į	İ	İ
Redby	Rosewood	50				
Redby						
Jack pine	Ulen	40	 			 
Jack pine	Redby	   5	  Balsam fir	   55	114	  Jack pine, red
Paper birch		i	•		!	pine, white spruce
Red pine		į			57	
White spruce		ĺ	Quaking aspen	60	72	
Deerwood		1			100	
Syrene			White spruce	55	100	
1182:  Warroad	Deerwood	   3	 	 		 
1182:  Warroad		ĺ	İ	ĺ	ĺ	İ
Warroad	Syrene	2				
Warroad	1182•	 	 	l I	 	 
Enstrom		85				
Enstrom		İ	İ	į	j	İ
Bur oak	Wabanica	7				
Bur oak	En about		 		114	
Quaking aspen 65 72 pine   Red pine 65 114	EIISCIOIII	5	•		1	
Red pine 65		İ	!		1	:
Sax		İ			1	
arborvitae,   tamarack		j	White spruce	55	100	İ
tamarack	Sax	   3	 	 	 	  Black ash, eastern
Dora, ponded       90             Seelyeville, ponded       4             Wildwood       4       Black ash       45       29       Black ash, black		   	   	   	   	•
Seelyeville, ponded 4           Wildwood 4   Black ash   45   29   Black ash, black		ļ.	!		ļ	!
	Dora, ponded	90				
	Seelyeville, ponded	   <b>4</b>	 	 	 	 
	Wildwood	4	Black ash	45	29	Black ash, black
Black spruce  40   43   spruce, tamarac		į	!		1	spruce, tamarack
Eastern arborvitae  30   43		İ	. –		1	İ
Tamarack 40   29			Tamarack	40	29	

Table 12.--Forest Productivity--Continued

		Potential prod	uctivi	ty	<u> </u>
Map symbol and	Component	:			
component name	percent	Common trees		Volume	Trees to manage
			index	of wood	
	<u> </u>	1	<u> </u>	fiber	1
	 	 	 	cu ft/ac	 
1187:	 	 	 	 	 
Boash	2				
			į	j	j
1191:					
Sahkahtay	85	Balsam fir	'	100	Black ash, black
		Black ash	!	14	spruce
	 	Quaking aspen	50	43	 
Cormant	l   5	  Balsam fir	50	100	Black ash, black
		Black ash	'	29	spruce, green ash
	İ	Black spruce	45	43	
		Quaking aspen	60	72	
Deerwood	5				
Karlstad	   3	  Bur oak	   45	   29	  Bur oak, eastern
Kailstad	3 	Quaking aspen	!	57	white pine, red
	 	Red pine		100	pine, white spruce
	! 			=00	
Redby	2	Balsam fir	55	114	Jack pine, red
		Jack pine	55	72	pine, white spruce
		Paper birch	55	57	
		Quaking aspen		72	
		Red pine		100	
		White spruce	55	100	
1206:	 	 	 	 	 
Cormant	55	Balsam fir	50	100	Black ash, black
		Black ash	45	29	spruce, green ash
		Black spruce	45	43	
		Quaking aspen	60	72	[
- "					
Redby	35	Balsam fir   Jack pine	'	114   72	Jack pine, red
	 	Quaking aspen		72	pine, white spruce
	 	Red pine	'	100	 
		White spruce	'	100	
			ĺ		
Hiwood	5	Balsam fir		115	Eastern white pine
		Jack pine	'	85	jack pine, red
		Paper birch	'	49	pine, white spruce
	 	Quaking aspen  Red pine	60	64   115	 
		White spruce		96	 
	! 			İ	
Leafriver	5   5				
1214:	! 	 		! 	! 
Mustinka	90				
Espelie	   4		 		
Wildwood	 	  Plack ach-	   4E		  Plack ach black
MITUWOOG	4 	Black ash   Black spruce		29   43	Black ash, black   spruce, tamarack
	! 	Eastern arborvitae		43	Spince, camarack
		Tamarack		29	
	i İ	l	i	i	i

Table 12.--Forest Productivity--Continued

War man 2 2		Potential prod	uctivi	ty	
Map symbol and component name	Component   percent 	   Common trees   		   Volume  of wood   fiber	   Trees to manage   
	İ	İ	İ	cu ft/ac	ĺ
1014					
1214: Dalbo	   2	  Balsam fir	   65	   129	  Bur oak, green ash,
Daibo	2	Black ash	!	29	white spruce
	İ	Bur oak		43	 
	İ	Paper birch	65	72	İ
		Quaking aspen	70	86	
		White spruce	60	114	
10545					
1274B:	   40	  Balsam fir	   55	114	   Took mine med
Redby	4±0 	Jack pine	!	114   72	Jack pine, red   pine, white spruce
	I I	Quaking aspen		72	pine, white spidce
	İ	Red pine		100	 
	İ	White spruce		100	
	İ	<u> </u>	į	İ	
Hiwood	30	Balsam fir	55	114	Eastern white pine,
		Jack pine	60	86	jack pine, red
		Quaking aspen	60	72	pine, white spruce
		Red pine		114	
		White spruce	50	100	
Tanéninan anadad	15				Dlash ask blask
Leafriver, wooded	15	Black ash   Black spruce	!	29   43	Black ash, black   spruce, tamarack
	l I	Tamarack		14	spruce, camarack
	I I	Tamarack	30	17	 
Clearriver	5	Balsam fir	55	114	Eastern white pine,
	İ	Jack pine	55	72	jack pine, red
	İ	Quaking aspen	60	72	pine, white spruce
	İ	Red pine	65	114	
		White spruce	50	100	
	_				
Cormant	5	Balsam fir		100	Black ash, black
		Black ash	!	29	spruce, green ash
	l I	Black spruce Quaking aspen		43   72	 
	l I	Quaking aspen	60 	72	 
Zimmerman	l 5	  Balsam fir	50	100	Eastern white pine,
	İ	Jack pine	!	!	jack pine, red
	İ	Quaking aspen		53	pine
	İ	Red pine	55	86	i -
	ĺ	İ	ĺ		İ
1305:					
Hilaire	85				
Espelie	11				
Grano	   2	 	 	 	 
Grano	<u>-</u>	 	i	 	 
Redby	2	Balsam fir	55	114	Jack pine, red
- <b>4</b>	!	Jack pine		72	pine, white spruce
		Paper birch		57	 
		Quaking aspen		72	
		Red pine	60	100	
		White spruce	55	100	
1314:					
Tacoosh	90	Black ash		29	Black ash, black
	 	Black spruce		43	spruce, tamarack
	I	Tamarack	40	29	I

Table 12.--Forest Productivity--Continued

		Potential prod	uctivi	ty	
Map symbol and component name	Component   percent 	   Common trees   	  Site  index	of wood fiber	Trees to manage
		l	 	cu ft/ac	 
1314: Rifle	   8   	   	       	     	  Black spruce,   eastern   arborvitae,   tamarack
Sax	   2   	     	     	     	  Black ash, eastern   arborvitae,   tamarack
1327B:					
Karlstad	65   	Bur oak   Quaking aspen   Red pine	45   55   60	29   57   100	Bur oak, eastern   white pine, red   pine, white spruce
Marquette	   25 	  Bur oak  Quaking aspen	   40   50	   29   43	  Bur oak, red pine 
		Red pine	55	86	
Sahkahtay	   7 	  Balsam fir  Black ash   Quaking aspen	   50   40   50	100 14 43	  Black ash, black   spruce 
Redby	   3 	  Balsam fir  Jack pine  Paper birch	55	   114   72   57	  Jack pine, red   pine, white spruce 
	   	Quaking aspen  Red pine  White spruce	1	72   100   100	 
1328:		 			 
Northwood, wooded	90	Black ash   Black spruce   Eastern arborvitae   Tamarack	45   40   30   40	29   43   43   29	Black ash, black   spruce, eastern   arborvitae,   tamarack
				25	canarack
Berner, wooded	5	Black ash		29 43	Black spruce,   eastern
	 	Eastern arborvitae	30	43	arborvitae,
Grygla	5	  Balsam fir	   60	   114	  Black ash, black
	 	Black ash   Paper birch   Quaking aspen	60	29   72   72	spruce, white   spruce
1333:		 	 	 	 
Dora, wooded	90	Black ash		29	Black ash, black
	   	Black spruce   Eastern arborvitae  Tamarack	30	43   43   29	spruce, eastern   arborvitae,   tamarack
Lupton	4	  Black ash	   40	   14	  Black ash, black
		Black spruce		43	spruce, tamarack
	 	Eastern arborvitae  Tamarack		36   43 	   
Wildwood	4	Black ash	1	29	Black ash, black
		Black spruce  Eastern arborvitae	30	43	spruce, tamarack
		Tamarack	40	29	

Table 12.--Forest Productivity--Continued

	1	Potential produ			
Map symbol and component name	Component   percent	Common trees	  Site	!	Trees to manage
	 	 	index	of wood fiber	 
	<u> </u>	<u> </u>	<u> </u>	cu ft/ac	<u> </u>
	i		i		 
1333:	į		i	İ	
Auganaush	2	Balsam fir	60	114	Black ash, black
	[	Black ash		29	spruce, white
	!	Paper birch		72	spruce
		Quaking aspen	65	72	
1399B:		 	l I	 	 
Two Inlets	85	Balsam fir	50	100	Eastern white pine,
	İ	Jack pine		72	jack pine, red
	İ	Quaking aspen	55	57	pine
		Red pine	55	86	
	!		[		!
Wurtsmith	6	Balsam fir		114	Eastern white pine,
		Jack pine		86 72	jack pine, red
		Quaking aspen   Red pine		114	pine, white spruce
	i i	White spruce		100	
	i			=00	 
Zimmerman	6	Balsam fir	50	100	Eastern white pine,
	ĺ	Jack pine	50	72	jack pine, red
		Quaking aspen	55	53	pine
	ļ	Red pine	55	86	
Maahan		   Dalaam 64a		114	
Meehan	3	Balsam fir   Jack pine		114   72	Eastern white pine, jack pine, red
	 	Paper birch		57	pine, white spruce
	i I	Quaking aspen		72	pine, white bpidee
	İ	Red pine		100	
	İ		İ	İ	İ
1401:	1				[
Grygla, depressional	90	Black ash		14	Black ash, black
		Black spruce		43	spruce
	1	Quaking aspen	40	29	 
Northwood, wooded	   5	Black ash	45	   29	Black ash, black
,	i	Black spruce		43	spruce, eastern
	i	Eastern arborvitae		43	arborvitae,
	İ	Tamarack	40	29	tamarack
	[				
Chilgren	3	Balsam fir		114	Black ash, black
		Black ash		29 72	spruce, white
	l I	Paper birch   Quaking aspen	:	!	spruce
	 	White spruce		100	 
	İ		i		
Grygla	2	Balsam fir	60	114	Black ash, black
		Black ash		29	spruce, white
		Paper birch		72	spruce
		Quaking aspen	65	72	
1402:	 	 	[ [	 	 
Leafriver, wooded	90	Black ash	45	   29	Black ash, black
, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		Black spruce		43	spruce, eastern
	į	Eastern arborvitae		43	arborvitae,
		Tamarack	40	29	tamarack

Table 12.--Forest Productivity--Continued

. ,		Potential produ	uctivi	ty	
Map symbol and component name	Component   percent	Common trees		   Volume	Trees to manage
		 	index 	of wood fiber	 
			l	cu ft/ac	<u> </u>
			İ		
1402:					
Cormant	4	Balsam fir	!	100	Black ash, black
	 	Black ash   Black spruce	:	29 43	spruce, green ash
		Quaking aspen	:	72	
			İ	İ	
Tawas	4	Black ash	:	29	Black spruce,
	 	Black spruce   Eastern arborvitae	:	43   43	eastern   arborvitae,
		Tamarack		29	tamarack
Redby	2	Balsam fir	55	114	Jack pine, red
		Jack pine	:	72	pine, white spruce
		Paper birch	:	57	l
		Quaking aspen  Red pine	:	72 100	 
		White spruce	55	100	
		_	į	į	
1404:					
Berner, wooded	90	Black ash	:	29	Black spruce,
		Black spruce	:	43   43	eastern
	 	Eastern arborvitae  Tamarack	30 40	43	arborvitae, tamarack
	!		-0		
Lupton	4	Black ash	40	14	Black ash, black
		Black spruce	:	43	spruce, tamarack
		Eastern arborvitae		36	
	 	Tamarack	35 	43	 
Northwood, wooded	4	Black ash	45	29	Black ash, black
		Black spruce	40	43	spruce, eastern
		Eastern arborvitae		43	arborvitae,
		Tamarack	40	29	tamarack
Grygla	   2	  Balsam fir	   60	   114	  Black ash, black
Giygia	4	Black ash	!	29	spruce, white
		Paper birch		72	spruce
		Quaking aspen	65	72	
1414: Nereson, very cobbly	   85	  Bur oak	   60	   43	  Bur oak, eastern
Nereson, very combin	05	Quaking aspen	70	86	white pine, red
		Red pine	55	86	pine, white spruce
Percy, very cobbly	10				
Pelan	   3	  Bur oak	   50	   29	  Bur oak, red pine
retair	3	Quaking aspen	!	57	Bul Oak, led pine
		Red pine		100	
				[	
Foxhome	2				
1444:	 	 	 	 	 
Wurtsmith	   85	  Balsam fir	   55	114	  Eastern white pine,
		Jack pine	:	86	jack pine, red
		Quaking aspen	60	72	pine, white spruce
		Red pine		114	
		White spruce	50	100	1

Table 12.--Forest Productivity--Continued

	Potential produ			ty	
Map symbol and component name	Component   percent 	   Common trees 	  Site  index	Volume	   Trees to manage 
		į į		fiber	
				cu ft/ac	!
1444	İ	  -			
1444: Meehan	   10	  Balsam fir	   55	   114	  Eastern white pine,
ili Cildii	10 	Jack pine	!	72	jack pine, red
		Paper birch		!	pine, white spruce
	İ	Quaking aspen	60	72	i -
		Red pine	60	100	!
Clearriver	   2	  Balsam fir	   55	   114	  Eastern white pine,
Clearitver	<del>-</del>	Jack pine		72	jack pine, red
	 	Quaking aspen		!	pine, white spruce
		Red pine		114	
	İ	White spruce	50	100	İ
The Inland	   2	  Palgam fin		100	  Engtown white mine
Two Inlets	!	Balsam fir   Jack pine	!	100   72	Eastern white pine,   jack pine, red
	 	Quaking aspen		57	pine
	 	Red pine		86	
Cormant	1	Balsam fir		100	Black ash, black
	 	Black ash		29 43	spruce, green ash
	l I	Black spruce	60	72	 
	 	Quaking aspen	00	/2	 
1808:		İ	ĺ	ĺ	İ
Markey, ponded	90				
Leafriver	   4	 	 	 	 
			į	į	İ
Seelyeville, ponded	4				
Cormant	2	  Balsam fir	50	100	Black ash, black
	İ	Black ash	45	29	spruce, green ash
	ĺ	Black spruce	45	43	İ
		Quaking aspen	60	72	
1923B:	 	 	 	 	 
Garnes, very stony	85	Balsam fir	65	129	Bur oak, eastern
	İ	Black ash	55	29	white pine, red
	ĺ	Bur oak	60	43	pine, white spruce
		Paper birch	65	72	
		Quaking aspen		86	
		Red pine	60	100	
	 	White spruce	60 	114	 
Chilgren	10	  Balsam fir	60	114	Black ash, black
_	İ	Black ash	50	29	spruce, white
	ĺ	Paper birch	60	72	spruce
		Quaking aspen		72	
	 	White spruce	55	100	 
Eckvoll	   3	  Balsam fir	   60	   114	  Bur oak, eastern
-	!	Bur oak		43	white pine, red
	'	Paper birch		72	pine, white spruce
		Quaking aspen	65	72	_
		Red pine	65	114	
	 	White spruce	60	114	 
Pelan	   2	  Bur oak	   50	   29	Bur oak, red pine
-	_	Quaking aspen		57	
				100	i
		Red pine	0.0	100	

Table 12.--Forest Productivity--Continued

		Potential prod	ty		
Map symbol and	Component				
component name	percent	t   Common trees  Sit	Site	Volume	Trees to manage
			index	of wood	
		<u> </u>		fiber	
				cu ft/ac	
1984:	 	 		 	 
Leafriver	90				
Cormant	   5	  Balsam fir	50	100	Black ash, black
		Black ash	45	29	spruce, green ash
		Black spruce	45	43	
		Quaking aspen	60	72	
Markey	   3				
Redby	   2	  Balsam fir	   55	   114	  Jack pine, red
	ĺ	Jack pine	55	72	pine, white spruc
	ĺ	Paper birch	55	57	
		Quaking aspen	60	72	
		Red pine	60	100	
		White spruce	55	100	

Table 13.--Forest Land Harvest Equipment Considerations

(Only the soils that support vegetation suitable for forest land management are listed. See text for a description of the considerations listed in this table.)

Map symbol	Percent	Forest land harvest equipment
and	of	considerations
component name	map unit	<u>                                     </u>
48B:		
Hiwood	85	Poor traction (loose sandy material)
Redby	7	Wetness
		Poor traction (loose sandy material)
Clearriver	3	Poor traction (loose sandy material)
Cormant	3	Wetness   Poor traction (loose sandy material)
Zimmerman	2	   Poor traction (loose sandy material)
64:		[ 
Ulen	85	Poor traction (loose sandy material)
Rosewood	10	Wetness
Redby	3	Wetness   Poor traction (loose sandy material)
Rushlake	2	   Poor traction (loose sandy material)
77:		
Garnes	85	Susceptible to rutting and wheel slippage
Chilgren	10	Wetness   Susceptible to rutting and wheel slippage
Eckvoll	3	   Poor traction (loose sandy material)
Pelan	2	   No major considerations
111:		
Hangaard	90	Wetness
Deerwood	5	   Wetness   Susceptible to rutting and wheel slippage
Rushlake	3	   Poor traction (loose sandy material)
Rosewood	2	   Wetness
116:		 
Redby	85	   Wetness   Poor traction (loose sandy material)
   Cormant  	8	   Wetness   Poor traction (loose sandy material)
   Hiwood	6	   Poor traction (loose sandy material)
   Leafriver  	1	   Wetness   Susceptible to rutting and wheel slippage
117:   Cormant	85	     Wetness
	63	Poor traction (loose sandy material)
Leafriver	7	   Wetness   Susceptible to rutting and wheel slippage

Table 13.--Forest Land Harvest Equipment Considerations--Continued

Map symbol	Percent	Forest land harvest equipment
and	of	considerations
component name	map unit	
117:		
Epoufette	3	Wetness
		Poor traction (loose sandy material)
Redby	3	Wetness
		Poor traction (loose sandy material)
Grygla, depressional	2	Wetness
		Poor traction (loose sandy material)
133:		
Dalbo	85	Susceptible to rutting and wheel slippage
Mustinka	10	Wetness
		Susceptible to rutting and wheel slippage
Moranville	5	Poor traction (loose sandy material)
	ĺ	_
145:		
Enstrom	85	Poor traction (loose sandy material)
		•
Grygla	10	Wetness
13		Poor traction (loose sandy material)
Redby	4	Wetness
110427	-	Poor traction (loose sandy material)
		FOOT CLACETON (1005e Sandy Material)
Pelan	1	No major considerations
relan	, <del>-</del>	No major considerations
147:	 	 
Spooner	l   85	Wetness
bpooner	03	Susceptible to rutting and wheel slippage
	l I	Poor traction (loose sandy material)
	 	FOOT CLACETON (100Se Sandy Material)
Baudette	l   5	Susceptible to rutting and wheel slippage
Baudette	, ,	Susceptible to futting and wheel slippage
Grygla	l   5	Wetness
Grygia	] 3	
	l I	Poor traction (loose sandy material)
Cama	l I 5	Wetness
Sago	) <b>&gt;</b>	
	 	Susceptible to rutting and wheel slippage
158B:	] 	 
Zimmerman	l   85	Poor traction (loogo condumntonial)
Zimmerman	85 	Poor traction (loose sandy material)
TT		   Bass toronting (large sender material)
Hiwood	6	Poor traction (loose sandy material)
man Tallaha		 
Two Inlets	6	Poor traction (loose sandy material)
- "		 
Redby	3	Wetness
		Poor traction (loose sandy material)
1650		
167B:		
Baudette	85	Susceptible to rutting and wheel slippage
_		
Spooner	10	Wetness
		Susceptible to rutting and wheel slippage
		Poor traction (loose sandy material)
Moranville	5	Poor traction (loose sandy material)

Table 13.--Forest Land Harvest Equipment Considerations--Continued

Map symbol	Percent	Forest land harvest equipment
and	of	considerations
component name	map unit	<u> </u>
191:		
Epoufette	85	Wetness
		Poor traction (loose sandy material)
	5	   Wetness
		Poor traction (loose sandy material)
Leafriver	5	   Wetness
Leairiver	5	Susceptible to rutting and wheel slippage
İ		
Meehan	5	Wetness   Poor traction (loose sandy material)
202:	0.5	I Water and
Meehan	85	Wetness   Poor traction (loose sandy material)
i		
Cormant	8	Wetness   Poor traction (loose sandy material)
i		
Wurtsmith	5	Poor traction (loose sandy material)
Leafriver	2	   Wetness
		Susceptible to rutting and wheel slippage
205:		
Karlstad	85	Poor traction (loose sandy material)
Sahkahtay	7	Wetness   Susceptible to rutting and wheel slippage
i		Poor traction (loose sandy material)
Managarah	5	   Page twenties (large sends material)
Marquette	5	Poor traction (loose sandy material)
Redby	2	Wetness
		Poor traction (loose sandy material)
Pits, gravel	1	Not rated
242B:		
Marquette	85	Poor traction (loose sandy material)
Karlstad	14	Poor traction (loose sandy material)
Pits, gravel	1	Not rated
280:		
Pelan	85	No major considerations
Share Ared at	10	I Water and
Strandquist	10	Wetness   Susceptible to rutting and wheel slippage
į		
Garnes	3	Susceptible to rutting and wheel slippage
Marquette	1	Poor traction (loose sandy material)
Dita amound	1	   Not rated
Pits, gravel	1	NOT lated
404:		
Chilgren	85	Wetness   Susceptible to rutting and wheel slippage
i		
Garnes	5	Susceptible to rutting and wheel slippage

Table 13.--Forest Land Harvest Equipment Considerations--Continued

Map symbol	Percent	Forest land harvest equipment
and component name	of map unit	considerations
COMPONENT NAME	map dire	<u> </u>
404:		
Grygla	5	Wetness
		Poor traction (loose sandy material)
***	_	L Water and
Haug	5	Wetness   Susceptible to rutting and wheel slippage
		busceptible to lutting and wheel slippage
481:		
Kratka	85	Wetness
		Poor traction (loose sandy material)
Northwood	5	   Wetness
NOT CHWOOD		Netness   Susceptible to rutting and wheel slippage
Percy	5	Wetness
		Susceptible to rutting and wheel slippage
Enstrom	3	   Barr turnting (large south material)
Enstrom	3	Poor traction (loose sandy material)
Strandquist	2	Wetness
		Susceptible to rutting and wheel slippage
482:	0.5	L Water and
Grygla	85	Wetness   Poor traction (loose sandy material)
Chilgren	5	Wetness
		Susceptible to rutting and wheel slippage
	_	 
Grygla, depressional	5	Wetness   Poor traction (loose sandy material)
		FOOT CTACCION (100se sandy material)
Enstrom	3	Poor traction (loose sandy material)
Northwood	2	Wetness
		Susceptible to rutting and wheel slippage
534:		
Mooselake	90	Wetness
		Susceptible to rutting and wheel slippage
Bullwinkle	4	Water and
Bullwinkle	4	Wetness   Susceptible to rutting and wheel slippage
Dora	3	Wetness
		Susceptible to rutting and wheel slippage
Marra 7	3	Water and
Tawas	3	Wetness   Susceptible to rutting and wheel slippage
541:		
Rifle	90	Wetness
		Susceptible to rutting and wheel slippage
Tacoosh	10	   Wetness
1400021		Susceptible to rutting and wheel slippage
	İ	
543:		
Markey	90	Wetness
		Susceptible to rutting and wheel slippage
Cormant	5	   Wetness
		Poor traction (loose sandy material)

Table 13.--Forest Land Harvest Equipment Considerations--Continued

Map symbol	Percent	Forest land harvest equipment
and	of	considerations
component name	map unit	001121401401011
543:		
Seelyeville	5	Wetness
-		Susceptible to rutting and wheel slippage
544:		
Cathro	90	Wetness
		Susceptible to rutting and wheel slippage
Percy, very cobbly	4	Wetness
		Susceptible to rutting and wheel slippage
Grand's	l   3	Wetness
Grygla	) 	Poor traction (loose sandy material)
		FOOT CLACCION (100Se Sandy Material)
Seelyeville	   3	Wetness
2001/011110	i	Susceptible to rutting and wheel slippage
546:		
Lupton	90	Wetness
		Susceptible to rutting and wheel slippage
Bullwinkle	4	Wetness
		Susceptible to rutting and wheel slippage
Dora	3	Wetness
		Susceptible to rutting and wheel slippage
Marra a		Waterana
Tawas	3	Wetness
	 	Susceptible to rutting and wheel slippage
561:		
Bullwinkle	90	Wetness
		Susceptible to rutting and wheel slippage
Lupton	4	Wetness
		Susceptible to rutting and wheel slippage
Northwood, wooded	4	Wetness
		Susceptible to rutting and wheel slippage
Chilgren	2	Wetness
	 	Susceptible to rutting and wheel slippage
563:		
Northwood	90	Wetness
	· · · · ·	Susceptible to rutting and wheel slippage
	İ	
Grygla	4	Wetness
		Poor traction (loose sandy material)
Berner	3	Wetness
		Susceptible to rutting and wheel slippage
Strandquist	3	Wetness
	l I	Susceptible to rutting and wheel slippage
565:		
Eckvoll	85	Poor traction (loose sandy material)
-		
Chilgren	5	Wetness
-		Susceptible to rutting and wheel slippage
Grygla	5	Wetness
		Poor traction (loose sandy material)

Table 13.--Forest Land Harvest Equipment Considerations--Continued

Map symbol	Percent	Forest land harvest equipment
and	of	considerations
component name	map unit	
	<u> </u>	
565:		
Hiwood	5	Poor traction (loose sandy material)
569:		
Wabanica	85	Wetness
		Susceptible to rutting and wheel slippage
Warroad	6	Wetness
Sax	   4	   Wetness
Sax	<del>"</del>	Wetness   Susceptible to rutting and wheel slippage
		busceptible to latting and wheel slippage
Grano	   3	   Wetness
	i	Susceptible to rutting and wheel slippage
Enstrom	2	Poor traction (loose sandy material)
	İ	_
570:		
Faunce	85	Poor traction (loose sandy material)
Clearriver	7	Poor traction (loose sandy material)
Zimmerman	4	Poor traction (loose sandy material)
Machan	3	   Wetness
Meehan	] 3 	Wetness   Poor traction (loose sandy material)
		Poor traction (roose sandy material)
Pits, gravel	1	Not rated
1100, 91001	_	
583:		
Nereson	85	No major considerations
Percy	10	Wetness
		Susceptible to rutting and wheel slippage
_		
Pelan	3	No major considerations
Bankana	l   2	   Bass toostiss (lass sada matarial)
Foxhome	<u>4</u> 	Poor traction (loose sandy material)
627:		 
Tawas	90	   Wetness
		Susceptible to rutting and wheel slippage
Leafriver	4	Wetness
		Susceptible to rutting and wheel slippage
		Poor traction (loose sandy material)
Lupton	4	Wetness
		Susceptible to rutting and wheel slippage
G		
Cormant	2	Wetness
	 	Poor traction (loose sandy material)
630:		 
Wildwood	90	   Wetness
		Susceptible to rutting and wheel slippage
		<b></b>
Boash	4	Wetness
		Susceptible to rutting and wheel slippage
Dora	4	Wetness
		Susceptible to rutting and wheel slippage
	I	

Table 13.--Forest Land Harvest Equipment Considerations--Continued

Map symbol	Percent	Forest land harvest equipment
and	of	considerations
component name	map unit	
-	<u> </u>	
630:		
Espelie	2	Wetness
		Poor traction (loose sandy material)
643		
643:	l   85	   No major considerations
Huoc	65	NO Major considerations
Thiefriver	12	Wetness
Redby	3	Wetness
		Poor traction (loose sandy material)
645: Espelie	   85	   Wetness
Espelie	85	Wetness   Poor traction (loose sandy material)
		FOOT traction (100se sandy material)
Grano	5	Wetness
		Susceptible to rutting and wheel slippage
j		
Hilaire	5	No major considerations
	_	
Wildwood	5	Wetness
		Susceptible to rutting and wheel slippage
651:		
Thiefriver	85	Wetness
Grano	5	Wetness
		Susceptible to rutting and wheel slippage
Huot	   5	No major gangidanations
Huot	] 3	No major considerations
Wildwood	5	Wetness
		Susceptible to rutting and wheel slippage
708:		
Rushlake	85	Poor traction (loose sandy material)
Corliss	l l 6	   Poor traction (loose sandy material)
COIIIBB		
Redby	5	Wetness
		Poor traction (loose sandy material)
Hangaard	3	Wetness
Pits, gravel	1	Not rated
721B:		
Corliss	85	Poor traction (loose sandy material)
İ		
Rushlake	10	Poor traction (loose sandy material)
_		
Hangaard	4	Wetness
Pits, gravel	1	   Not rated
, Armier	_	
733:		
Berner	90	Wetness
		Susceptible to rutting and wheel slippage
Grygla	5	Wetness
		Poor traction (loose sandy material)
	I	I

Table 13.--Forest Land Harvest Equipment Considerations--Continued

	Danie t	The second secon
Map symbol and	Percent of	Forest land harvest equipment considerations
component name	map unit	Considerations
	-	
733:		
Seelyeville	5	Wetness   Susceptible to rutting and wheel slippage
i		susceptible to lutting and wheel slippage
737:		
Mahkonce	85	Susceptible to rutting and wheel slippage
Auganaush	10	Wetness Susceptible to rutting and wheel slippage
Eckvoll	5	Poor traction (loose sandy material)
755:		
Woodslake	85	Wetness Susceptible to rutting and wheel slippage
Boash	8	   Wetness   Susceptible to rutting and wheel slippage
	_	<u> </u>
Wildwood	5	Wetness Susceptible to rutting and wheel slippage
Dora	2	Wetness   Susceptible to rutting and wheel slippage
767:		
Auganaush	90	Wetness   Susceptible to rutting and wheel slippage
Mustinka	5	Wetness Susceptible to rutting and wheel slippage
Wildwood	3	   Wetness   Susceptible to rutting and wheel slippage
Mahkonce	2	Susceptible to rutting and wheel slippage
794:		
Clearriver	85	Poor traction (loose sandy material)
Hiwood	7	Poor traction (loose sandy material)
Meehan	5	   Wetness   Poor traction (loose sandy material)
i		
Faunce	3	Poor traction (loose sandy material)
1002:		
Fluvaquents, frequently		
flooded    	90	Flooding   Wetness   Susceptible to rutting and wheel slippage
Seelyeville	6	   Wetness   Susceptible to rutting and wheel slippage
Hapludalfs	2	Slope
		Susceptible to rutting and wheel slippage
Water	2	Not rated
		-

Table 13.--Forest Land Harvest Equipment Considerations--Continued

Man number		Tanak land bannak andanah
Map symbol and	Percent of	Forest land harvest equipment considerations
component name	map unit	Considerations
Component name	map unic	l
1030:		 
Pits, gravel	75	Not rated
Udipsamments	20	Slope
		Poor traction (loose sandy material)
Corliss	2	   Poor traction (loose sandy material)
Karlstad	2	Poor traction (loose sandy material)
Hangaard	1	Wetness
1067:		 
Fluvaquents, frequently		
flooded	60	   Flooding
		Wetness
i		Susceptible to rutting and wheel slippage
i		
Hapludalfs	30	Slope
		Susceptible to rutting and wheel slippage
Seelyeville	5	Wetness
		Susceptible to rutting and wheel slippage
	_	
Water	5	Not rated
1133B:		 
Skime	85	Poor traction (loose sandy material)
J		
Hiwood	10	Poor traction (loose sandy material)
Zippel	5	Wetness
44505		
1179B:     Moranville	85	Door traction (loage gards material)
MOTATIVITIE	65	Poor traction (loose sandy material)
Baudette	5	Susceptible to rutting and wheel slippage
i		
Hiwood	5	Poor traction (loose sandy material)
	_	
Spooner	5	Wetness   Susceptible to rutting and wheel slippage
		Poor traction (loose sandy material)
1181:		
Rosewood	50	Wetness
Ulen	40	Poor traction (loose sandy material)
Redby	5	   Wetness
y	5	Poor traction (loose sandy material)
Deerwood	3	Wetness
i		Susceptible to rutting and wheel slippage
İ		
Syrene	2	Wetness
1182:		
Warroad	85	Wetness
Wabanica	7	   Wetness
"@Daiii =	,	wetness   Susceptible to rutting and wheel slippage
Enstrom	5	Poor traction (loose sandy material)
İ		

Table 13.--Forest Land Harvest Equipment Considerations--Continued

		Total Land Land Land Land
Map symbol	Percent	Forest land harvest equipment
and	of	considerations
component name	map unit	
1182:		
Sax	3	Wetness
Bax	3	Susceptible to rutting and wheel slippage
		busceptible to lutting and wheel slippage
1187:		
Dora, ponded	90	Wetness
		Susceptible to rutting and wheel slippage
Seelyeville, ponded	4	Wetness
		Susceptible to rutting and wheel slippage
Wildwood	4	Wetness
		Susceptible to rutting and wheel slippage
Boash	2	Wetness
		Susceptible to rutting and wheel slippage
1191:		
Sahkahtay	85	Wetness
bamancay	03	Susceptible to rutting and wheel slippage
i		Poor traction (loose sandy material)
i		
Cormant	5	Wetness
İ		Poor traction (loose sandy material)
Deerwood	5	Wetness
		Susceptible to rutting and wheel slippage
Karlstad	3	Poor traction (loose sandy material)
Redby	2	Wetness
Keaby	_	Poor traction (loose sandy material)
1206:		
Cormant	55	Wetness
		Poor traction (loose sandy material)
Redby	35	Wetness
		Poor traction (loose sandy material)
Hiwood	5	Poor traction (loose sandy material)
HIWOOd	5	POOT CLACCION (100se sandy material)
Leafriver	5	Wetness
		Susceptible to rutting and wheel slippage
j		
1214:		
Mustinka	90	Wetness
		Susceptible to rutting and wheel slippage
Espelie	4	Wetness
		Poor traction (loose sandy material)
Wildwood	4	Wetness
WIIdwood	-	Susceptible to rutting and wheel slippage
i		
Dalbo	2	Susceptible to rutting and wheel slippage
i		
1274B:		
Redby	40	Wetness
		Poor traction (loose sandy material)
Hiwood	30	Poor traction (loose sandy material)

Table 13.--Forest Land Harvest Equipment Considerations--Continued

Map symbol	Percent	Forest land harvest equipment
and	of	considerations
component name	map unit	
1274B:		
Leafriver, wooded	15	Wetness
		Susceptible to rutting and wheel slippage
		Poor traction (loose sandy material)
	İ	
Clearriver	5	Poor traction (loose sandy material)
	İ	-
Cormant	5	Wetness
	İ	Poor traction (loose sandy material)
	İ	•
Zimmerman	5	Poor traction (loose sandy material)
1305:	i I	
Hilaire	85	No major considerations
Espelie	   11	Wetness
Dopciic	<del></del>	Poor traction (loose sandy material)
	l I	FOOT CHACCION (100Se Sandy Material)
Grano	l 2	Wetness
GIANO	<b>4</b>	Susceptible to rutting and wheel slippage
	l I	susceptible to futting and wheel slippage
Do dhoo	l   2	77-6
Redby	<b>4</b>	Wetness
	l I	Poor traction (loose sandy material)
1314:	l I	 
	l l 90	77-6
Tacoosh	J 90	Wetness
		Susceptible to rutting and wheel slippage
P.161 .		***
Rifle	8	Wetness
		Susceptible to rutting and wheel slippage
Sax		***
Sax	2	Wetness
	l I	Susceptible to rutting and wheel slippage
1327B:	l I	 
Karlstad	   65	Poor traction (loose sandy material)
Kalistau	05	FOOT CLACETON (100Se Sandy Material)
Marquette	   25	Poor traction (loose sandy material)
marquette	23	FOOT traction (100se sandy material)
Sahkahtay	   7	
Sankancay	, 	Susceptible to rutting and wheel slippage
	l I	
	I I	Poor traction (loose sandy material)
Redby	   3	Wetness
remy	l 3	Wetness   Poor traction (loose sandy material)
	I I	FOOT CLASSION (10056 SANDY MATERIAL)
1220.	l I	
1328:	l l 90	77-6
Northwood, wooded	90	Wetness
		Susceptible to rutting and wheel slippage
D		***
Berner, wooded	5	Wetness
	 	Susceptible to rutting and wheel slippage
g		***
Grygla	5	Wetness
		Poor traction (loose sandy material)
1222		
1333:	1 00	Wataara
Dora, wooded	90	Wetness
		Susceptible to rutting and wheel slippage
Tuestan		Wataara
Lupton	4	Wetness
		Susceptible to rutting and wheel slippage
	I	

Table 13.--Forest Land Harvest Equipment Considerations--Continued

		Toward To
Map symbol   and	Percent of	Forest land harvest equipment considerations
component name	map unit	Considerations
1333:		
Wildwood	4	Wetness   Susceptible to rutting and wheel slippage
i		susceptible to lutting and wheel slippage
Auganaush	2	Wetness
		Susceptible to rutting and wheel slippage
1399B:		
Two Inlets	85	Poor traction (loose sandy material)
Wurtsmith	6	Poor traction (loose sandy material)
	_	
Zimmerman	6	Poor traction (loose sandy material)
Meehan	3	Wetness
į		Poor traction (loose sandy material)
1401:	90	Wetness
Grygla, depressional	90	Poor traction (loose sandy material)
İ		
Northwood, wooded	5	Wetness
		Susceptible to rutting and wheel slippage
Chilgren	3	Wetness
	3	Susceptible to rutting and wheel slippage
į		
Grygla	2	Wetness
		Poor traction (loose sandy material)
1402:		
Leafriver, wooded	90	Wetness
I		Susceptible to rutting and wheel slippage
		Poor traction (loose sandy material)
   Cormant	4	Wetness
	_	Poor traction (loose sandy material)
İ		
Tawas	4	Wetness
		Susceptible to rutting and wheel slippage
Redby	2	Wetness
į		Poor traction (loose sandy material)
1404: Berner, wooded	90	Wetness
Jerner, wooded	30	Susceptible to rutting and wheel slippage
į		
Lupton	4	Wetness
		Susceptible to rutting and wheel slippage
Northwood, wooded	4	Wetness
		Susceptible to rutting and wheel slippage
!		
Grygla	2	Wetness
i I		Poor traction (loose sandy material)
1414:		
Nereson, very cobbly	85	No major considerations
Porgy yory gobbl-	10	Wotness
Percy, very cobbly	10	Wetness   Susceptible to rutting and wheel slippage
j		
·		

Table 13.--Forest Land Harvest Equipment Considerations--Continued

Map symbol	Percent	Forest land harvest equipment
and	of	considerations
component name	map unit	
1414: Pelan	3	   No major considerations
r Grain	, J	No major considerations
Foxhome	2	Poor traction (loose sandy material)
1444:		
Wurtsmith	85	Poor traction (loose sandy material)
Meehan	10	Wetness
		Poor traction (loose sandy material)
Clearriver	2	   Bass to the (large residual)
Clearriver	2	Poor traction (loose sandy material)
Two Inlets	2	Poor traction (loose sandy material)
Cormant	1	   Wetness
İ		Poor traction (loose sandy material)
1808:	0.0	 
Markey, ponded	90	Wetness   Susceptible to rutting and wheel slippage
		busceptible to lutting and wheel slippage
Leafriver	4	Wetness
		Susceptible to rutting and wheel slippage
G J		L Water and
Seelyeville, ponded	4	Wetness   Susceptible to rutting and wheel slippage
Cormant	2	Wetness
		Poor traction (loose sandy material)
1923B:		 
Garnes, very stony	85	   Susceptible to rutting and wheel slippage
Chilgren	10	Wetness
		Susceptible to rutting and wheel slippage
Eckvoll	3	   Poor traction (loose sandy material)
	3	
Pelan	2	No major considerations
1984: Leafriver	90	Water and
Learriver	90	Wetness   Susceptible to rutting and wheel slippage
Cormant	5	Wetness
<u> </u>		Poor traction (loose sandy material)
Markov	3	Wotness
Markey	3	Wetness   Susceptible to rutting and wheel slippage
i		
Redby	2	Wetness
<u> </u>		Poor traction (loose sandy material)
		<u> </u>

Table 14.--Forest Haul Road Considerations

(Only the soils that support vegetation suitable for forest land management are listed. See text for a description of the considerations listed in this table.)

Map symbol   and	Percent	Forest haul road considerations
component name	map unit	considerations
48B:     Hiwood	85	   No major considerations
Redby	7	   Wetness 
Clearriver	3	No major considerations
Cormant	3	Wetness
Zimmerman	2	No major considerations
64:     Ulen	85	   No major considerations 
Rosewood	10	Wetness
Redby	3	Wetness
Rushlake	2	No major considerations
77: Garnes	85	Low bearing strength
Chilgren	10	   Wetness   Low bearing strength
Eckvoll	3	No major considerations
Pelan	2	   No major considerations 
111:   Hangaard	90	   Wetness
i		
Deerwood	5	Wetness   Low bearing strength 
Rushlake	3	  No major considerations
Rosewood	2	   Wetness
116:   Redby	85	Wetness
Cormant	8	Wetness
  Hiwood	6	No major considerations
Leafriver	1	   Wetness   Low bearing strength
117:	85	Wetness
Leafriver	7	   Wetness   Low bearing strength
Epoufette	3	Wetness
Redby	3	   Wetness
Grygla, depressional	2	   Wetness 

Table 14.--Forest Haul Road Considerations--Continued

Map symbol	Percent	Forest haul road
and	of	considerations
component name	map unit	
100		
133:   Dalbo	85	Low bearing strength
	03	now bearing belengen
Mustinka	10	Wetness
		Low bearing strength
Moranville	5	   No major considerations
Moramyiric	3	
145:		
Enstrom	85	No major considerations
Grygla	10	   Wetness
01/910	10	
Redby	4	Wetness
	_	
Pelan	1	No major considerations
147:		
Spooner	85	Wetness
		Low bearing strength
Baudette	5	   Low bearing strength
Grygla	5	Wetness
<b>G</b> ama	-	l Water and
Sago	5	Wetness   Low bearing strength
		How bearing screngen
158B:		
Zimmerman	85	No major considerations
Hiwood	6	   No major considerations
1111000	Ü	
Two Inlets	6	No major considerations
D. D.	2	L Water and
Redby	3	Wetness
167B:		
Baudette	85	Low bearing strength
Spooner	10	Water-ar
spooner	10	Wetness   Low bearing strength
Moranville	5	No major considerations
191:		
Epoufette	85	   Wetness
•		
Cormant	5	Wetness
Leafriver	5	   Wetness
Leairiver	5	wetness   Low bearing strength
i		
Meehan	5	Wetness
202:		 
Meehan	85	   Wetness
i		
Cormant	8	Wetness
Wurtsmith	5	   No major considerations
Har Obur Cir	5	1.0 major constderactons
Leafriver	2	Wetness
		Low bearing strength
l		I

Table 14.--Forest Haul Road Considerations--Continued

Map symbol	Percent	Forest haul road
and	of	considerations
component name	map unit	
205:		 
Karlstad	85	No major considerations
Sahkahtay	7	Wetness   Low bearing strength
i		Low bearing strength
Marquette	5	Slope
De Alex	•	l water and
Redby	2	Wetness
Pits, gravel	1	Not rated
ļ.		
242B:	0.5	Clore
Marquette	85	Slope
Karlstad	14	No major considerations
	_	
Pits, gravel	1	Not rated
280:		
Pelan	85	No major considerations
Ghuan danidah	10	   Wetness
Strandquist	10	wetness   Low bearing strength
Garnes	3	Low bearing strength
   Marquette	1	   Slope
marquecce	-	Blope
Pits, gravel	1	Not rated
404		
404: Chilgren	85	   Wetness
		Low bearing strength
_	_	
Garnes	5	Low bearing strength
Grygla	5	Wetness
ļ.		
Haug	5	Wetness   Low bearing strength
i		How bearing screngen
481:		
Kratka	85	Wetness
Northwood	5	   Wetness
	-	Low bearing strength
!		
Percy	5	Wetness   Low bearing strength
i		How bearing screngen
Enstrom	3	No major considerations
Character density of	2	Mahaana
Strandquist	2	Wetness   Low bearing strength
İ		
482:		
Grygla	85	Wetness
Chilgren	5	   Wetness
Ĭ		Low bearing strength
!	_	
Grygla, depressional	5	Wetness
l		I

Table 14.--Forest Haul Road Considerations--Continued

Map symbol	Percent	Forest haul road
and	of	considerations
component name	map unit	
400		
482: Enstrom	3	   No major considerations
Elistiom	<b>.</b>	NO Major considerations
Northwood	2	Wetness
		Low bearing strength
534:		
Mooselake	90	Wetness
		Low bearing strength
Bullwinkle	4	Wetness
İ		Low bearing strength
Dora	3	Wetness
		Low bearing strength
Tawas	3	
		Low bearing strength
İ		
541:		
Rifle	90	Wetness
		Low bearing strength
Tacoosh	10	Wetness
		Low bearing strength
543:		 
Markey	90	Wetness   Low bearing strength
		now bearing screngen
Cormant	5	Wetness
İ		
Seelyeville	5	Wetness
		Low bearing strength
544:		
Cathro	90	Wetness
İ		Low bearing strength
Percy, very cobbly	4	Wetness
		Low bearing strength
Grygla	3	Wetness
Seelyeville	3	Wetness
		Low bearing strength
546:		 
Lupton	90	   Wetness
i		Low bearing strength
Bullwinkle	4	Wetness
		Low bearing strength
Dora	3	   Wetness
		Low bearing strength
İ		
Tawas	3	Wetness
		Low bearing strength
		I

Table 14.--Forest Haul Road Considerations--Continued

Map symbol	Percent	Forest haul road
and	of	considerations
component name	map unit	
COMPONENT NAME	map unic	<u> </u>
561:		
Bullwinkle	90	Wetness
		Low bearing strength
Lupton	4	Wetness
парсоп	- 4	! -
		Low bearing strength
Northwood, wooded	4	Wetness
		Low bearing strength
Chilgren	2	Wetness
		Low bearing strength
563:		
Northwood	90	Wetness
NOT CHWOOD	, 30	! -
		Low bearing strength
Grygla	4	Wetness
Berner	   3	Wetness
Berner	. 3	! -
		Low bearing strength
Strandquist	3	Wetness
-		Low bearing strength
	 	Low Dearing Berengen
565:		
Eckvoll	85	No major considerations
Chilgren	5	Wetness
g	,	Low bearing strength
	l I	now bearing screngen
_		
Grygla	5	Wetness
Hiwood	5	No major considerations
569:	! 	 
Wabanica	85	Wetness
		Low bearing strength
Warroad	6	Wetness
	i -	· · · · · · · · · · · · · · · · · · ·
Co	I A	Webbegg
Sax	4	Wetness
		Low bearing strength
Grano	3	Wetness
		Low bearing strength
	1 	
Enstrom	2	No major considerations
570:		
Faunce	85	No major considerations
	55	
<b>63</b>	_	   w
Clearriver	7	No major considerations
Zimmerman	4	No major considerations
		-
Meehan	   3	   Wetness
Meendii	] 3 !	wedness
Pits, gravel	1	Not rated
,		

Table 14.--Forest Haul Road Considerations--Continued

Map symbol	Percent	Forest haul road
and	of	considerations
component name	map unit	
		<u> </u>
583:		 
	0.5	 
Nereson	85	No major considerations
Percy	10	Wetness
		Low bearing strength
į		
Pelan	3	No major considerations
i		
Foxhome	2	No major considerations
roxnome	2	No major considerations
627:		
Tawas	90	Wetness
		Low bearing strength
Leafriver	4	Wetness
I		Low bearing strength
i		
Lupton	4	Wetness
_upon	-	Low bearing strength
		now bearing screngen
	•	 
Cormant	2	Wetness
630:		
Wildwood	90	Wetness
		Low bearing strength
į		
Boash	4	Wetness
	_	Low bearing strength
		now bearing screngen
P		
Dora	4	Wetness
		Low bearing strength
Espelie	2	Wetness
643:		
Huot	85	No major considerations
i		
Thiefriver	12	Wetness
		Nethebb
Dodh:	3	Wetness
Redby	3	Wetness
645:		
Espelie	85	Wetness
Grano	5	Wetness
i		Low bearing strength
i		- <del>-</del>
Hilaire	5	No major considerations
	3	
Wildwood	5	Wetness
Wildwood	5	Wetness
!		Low bearing strength
651:		
Thiefriver	85	Wetness
Grano	5	Wetness
i		Low bearing strength
¦		
Huot	5	No major considerations
11406	J	No major constderactons
	-	 
Wildwood	5	Wetness
I		Low bearing strength

Table 14.--Forest Haul Road Considerations--Continued

Map symbol	Percent	Forest haul road
and	of	considerations
component name	map unit	
708:		
Rushlake	85	No major considerations
Corliss	6	No major considerations
Redby	5	Wetness
Hangaard	3	Wetness
Pits, gravel	1	Not rated
721B:		
Corliss	85	No major considerations
Rushlake	10	No major considerations
Hangaard	4	Wetness
Pits, gravel	1	Not rated
733:		
Berner	90	Wetness
		Low bearing strength
	_	
Grygla	5	Wetness
	_	
Seelyeville	5	Wetness
		Low bearing strength
<b>535</b>		
737:	   0E	   Tara bases's = ========b
Mahkonce	85	Low bearing strength
Auganaush	   10	   Wetness
Auganausn	1 10	wetness   Low bearing strength
	 	now bearing screngen
Eckvol1	   5	   No major considerations
BCRVOII	, J	No major considerations
755:	 	 
Woodslake	   85	   Wetness
		Low bearing strength
Boash	l 8	   Wetness
<del></del>		Low bearing strength
Wildwood	,   5	Wetness
		Low bearing strength
	İ	
Dora	2	Wetness
	İ	Low bearing strength
		· 
767:		
Auganaush	90	Wetness
		Low bearing strength
Mustinka	5	Wetness
		Low bearing strength
Wildwood	3	Wetness
		Low bearing strength
Mahkonce	2	Low bearing strength

Table 14.--Forest Haul Road Considerations--Continued

	l	The state of the s
Map symbol	Percent of	Forest haul road
and component name	or map unit	considerations
794:		
Clearriver	85	No major considerations
Hiwood	   <b>7</b>	No major gangidamatiang
niwoowin	, 	No major considerations
Meehan	5	Wetness
Faunce	3	No major considerations
1002:	 	 
Fluvaquents, frequently		
flooded	90	Flooding
		Wetness
		Low bearing strength
Seelyeville	l   6	   Wetness
-		Low bearing strength
Hapludalfs	2	Slope
	 	Low bearing strength
Water	   2	Not rated
1030:		
Pits, gravel	75	Not rated
Udipsamments	   20	   Slope
Carpsananciros	20	
Corliss	2	No major considerations
Karlstad	2	No major considerations
Hangaard	   1	   Wetness
1067:		
Fluvaquents, frequently flooded	   60	Flooding
1100ded	60	Flooding   Wetness
	 	Low bearing strength
	İ	
Hapludalfs	30	Slope
		Low bearing strength
Seelyeville	   5	   Wetness
2002,000		Low bearing strength
Water	5	Not rated
1133B:	 	
Skime	   85	No major considerations
	İ	
Hiwood	10	No major considerations
Zinnol	   5	   Wetness
Zippel	3	Wethess
1179B:		
Moranville	85	No major considerations
Day 1.44	_	
Baudette	5 	Low bearing strength
Hiwood	   5	   No major considerations
	İ	· 
Spooner	5	Wetness
	 	Low bearing strength
	I	I

Table 14.--Forest Haul Road Considerations--Continued

Map symbol	Percent	Forest haul road
and	of	considerations
component name	map unit	
1181:		
Rosewood	50	Wetness
	4.0	
Ulen	40	No major considerations
Redby	5	   Wetness
kedby	5	Wethess
Deerwood	3	   Wetness
2002.1000		Low bearing strength
Syrene	2	Wetness
_		i İ
1182:		
Warroad	85	Wetness
Wabanica	7	Wetness
		Low bearing strength
	_	
Enstrom	5	No major considerations
Sax	3	   Wetness
Sax	3	Wetness   Low bearing strength
		now bearing screngen
1187:		
Dora, ponded	90	Wetness
•		Low bearing strength
Seelyeville, ponded	4	Wetness
		Low bearing strength
Wildwood	4	Wetness
		Low bearing strength
Parak	2	   Webser
Boash		Wetness   Low bearing strength
		now bearing screngen
1191:		
Sahkahtay	85	Wetness
-		Low bearing strength
Cormant	5	Wetness
Deerwood	5	Wetness
		Low bearing strength
V1	2	No malan manaldanaki sa s
Karlstad	3	No major considerations
Redby	2	   Wetness
nouby	_	
1206:		
Cormant	55	Wetness
Redby	35	Wetness
Hiwood	5	No major considerations
	_	
Leafriver	5	Wetness
		Low bearing strength
1214.	 	 
1214: Mustinka	90	   Wetness
MGB CTHVG	30	wetness   Low bearing strength
Espelie	4	   Wetness
-	j	
	•	•

Table 14.--Forest Haul Road Considerations--Continued

Map symbol	Percent	Forest haul road
and	of	considerations
component name	map unit	l
1214:		
Wildwood	4	Wetness
		Low bearing strength
   Dalbo	2	   Low bearing strength
Jaibo	-	Low Bearing Screngen
1274B:		
Redby	40	Wetness
   Hiwood	30	   No major considerations
Leafriver, wooded	15	Wetness
		Low bearing strength
   Clearriver	5	   No major considerations
	3	
Cormant	5	Wetness
	_	
Zimmerman	5	No major considerations
1305:		
Hilaire	85	No major considerations
Espelie	11	Wetness
Grano	2	   Wetness
į		Low bearing strength
Redby	2	Wetness
1314:		
Tacoosh	90	Wetness
		Low bearing strength
Rifle	8	   Wetness
	-	Low bearing strength
Į.		
Sax	2	Wetness
i		Low bearing strength
1327B:		
Karlstad	65	No major considerations
Marquette	25	   Slope
Marquette	23	Slope
Sahkahtay	7	Wetness
		Low bearing strength
   Redby	3	   Wetness
	3	
1328:		
Northwood, wooded	90	Wetness
		Low bearing strength
Berner, wooded	5	   Wetness
i		Low bearing strength
Gla	-	Watersan
Grygla	5	Wetness
1333:		
Dora, wooded	90	Wetness
ļ		Low bearing strength
l		I

Table 14.--Forest Haul Road Considerations--Continued

Man area and a d	Dame t	Tanah hara ara a
Map symbol and	Percent of	Forest haul road considerations
component name	map unit	
1333:	4	   Wetness
Lupton	4	wetness   Low bearing strength
i		
Wildwood	4	Wetness
		Low bearing strength
Auganaush	2	   Wetness
		Low bearing strength
1399B:		
Two Inlets	85	No major considerations
Wurtsmith	6	No major considerations
Zimmerman	6	   No major considerations
i		
Meehan	3	Wetness
1401:		 
Grygla, depressional	90	Wetness
	_	
Northwood, wooded	5	Wetness   Low bearing strength
		Low Bearing Belengen
Chilgren	3	Wetness
		Low bearing strength
Grygla	2	   Wetness
1402: Leafriver, wooded	90	   Wetness
Healilvel, wooded		Low bearing strength
Cormant	4	Wetness
Tawas	4	Wetness
		Low bearing strength
Redby	2	   Wetness
Ready	_	
1404:		
Berner, wooded	90	Wetness   Low bearing strength
i		
Lupton	4	Wetness
		Low bearing strength
Northwood, wooded	4	   Wetness
j		Low bearing strength
Grygla	2	   Wetness
Grygra	_ <b>4</b>	nechess
1414:		
Nereson, very cobbly	85	No major considerations
Percy, very cobbly	10	   Wetness
		Low bearing strength
Palan	2	No maion considerables
Pelan	3	No major considerations
Foxhome	2	No major considerations
I		

Table 14.--Forest Haul Road Considerations--Continued

Map symbol	Percent	Forest haul road
and	of	considerations
component name	map unit	<u> </u>
1444:		 
Wurtsmith	0.5	No major gangidomations
wurtsmith	85	No major considerations
Meehan	10	   Wetness
meenan	10	Wethess
Clearriver	2	   No major considerations
Clearityer	-	No major considerations
Two Inlets	2	No major considerations
	-	
Cormant	1	   Wetness
	-	
1808:		
Markey, ponded	90	Wetness
1		Low bearing strength
i		
Leafriver	4	Wetness
j		Low bearing strength
İ		
Seelyeville, ponded	4	Wetness
		Low bearing strength
Cormant	2	Wetness
1923B:		
Garnes, very stony	85	Low bearing strength
	4.0	
Chilgren	10	Wetness
ļ		Low bearing strength
Eckvoll	3	   No major considerations
ECKAOTI	3	NO Major considerations
   Pelan	2	No major considerations
	-	
1984:		
Leafriver	90	Wetness
i		Low bearing strength
İ		
Cormant	5	Wetness
İ		
Markey	3	Wetness
I		Low bearing strength
I		
Redby	2	Wetness

Table 15.--Forest Log Landing Considerations

(Only the soils that support vegetation suitable for forest land management are listed. See text for a description of the considerations listed in this table.)

Map symbol and	Percent	Forest log landing considerations
component name	map unit	considerations
		Ī
48B: Hiwood	85	   No major considerations
Redby	7	   Wetness 
Clearriver	3	   No major considerations 
Cormant	3	Wetness
Zimmerman	2	No major considerations
64: Ulen	85	   No major considerations 
Rosewood	10	Wetness
Redby	3	Wetness
Rushlake	2	   No major considerations 
77: Garnes	85	   Susceptible to rutting and wheel slippage
Chilgren	10	   Wetness   Susceptible to rutting and wheel slippage
Eckvoll	3	   No major considerations
Pelan	2	No major considerations
111: Hangaard	90	Wetness
Deerwood	5	   Wetness   Susceptible to rutting and wheel slippage
Rushlake	3	   No major considerations 
Rosewood	2	Wetness
116: Redby	85	Wetness
Cormant	8	   Wetness 
Hiwood	6	   No major considerations 
Leafriver	1	Wetness   Susceptible to rutting and wheel slippage
117: Cormant	85	   Wetness
Leafriver	7	   Wetness   Susceptible to rutting and wheel slippage
Epoufette	3	   Wetness
Redby	3	   Wetness 
Grygla, depressional	2	   Wetness 

Table 15.--Forest Log Landing Considerations--Continued

Man gymbol	Domant	Forest les landins
Map symbol and	Percent of	Forest log landing considerations
component name	map unit	
		<u> </u>
133:		
Dalbo	85	Susceptible to rutting and wheel slippage
Mustinka	10	   Wetness
		Susceptible to rutting and wheel slippage
Moranville	5	No major considerations
145:		 
Enstrom	85	No major considerations
Grygla	10	Wetness
Redby	4	
Pelan	1	No major considerations
147:		 
Spooner	85	Wetness
		Susceptible to rutting and wheel slippage
Dandahka	5	 
Baudette	5	Susceptible to rutting and wheel slippage
Grygla	5	Wetness
Sago	5	Wetness
		Susceptible to rutting and wheel slippage
158B:		
Zimmerman	85	No major considerations
Hiwood	6	No major considerations
HIWOOQ	0	NO major considerations
Two Inlets	6	No major considerations
Redby	3	Wetness
167B:		
Baudette	85	Susceptible to rutting and wheel slippage
Spooner	10	   Wetness
Spooner	10	Susceptible to rutting and wheel slippage
i		į
Moranville	5	No major considerations
191:		 
Epoufette	85	Wetness
Cormant	5	Wetness
Leafriver	5	   Wetness
i		Susceptible to rutting and wheel slippage
Meehan	5	Wetness
202:		
Meehan	85	Wetness
Garman b	•	Water and
Cormant	8	Wetness
Wurtsmith	5	No major considerations
j		
Leafriver	2	Wetness
· ·		Susceptible to rutting and wheel slippage
'		ı

Table 15.--Forest Log Landing Considerations--Continued

Map symbol	Percent	Forest log landing
and	of.	considerations
component name	map unit	
205:	 	 
Karlstad	85	No major considerations
Sahkahtay	   7 	   Wetness   Susceptible to rutting and wheel slippage
Marquette	5	No major considerations
Redby	   2	   Wetness
Pits, gravel	   1	   Not rated
-		
242B: Marquette	85	   No major considerations
Karlstad	   14	   No major considerations
Pits, gravel	   1	   Not rated
280: Pelan	85	   No major considerations
Strandquist	   10 	   Wetness   Susceptible to rutting and wheel slippage
Garnes	3	Susceptible to rutting and wheel slippage
Marquette	1	   No major considerations
Pits, gravel	1	   Not rated
404:		
Chilgren	   85 	   Wetness   Susceptible to rutting and wheel slippage
Garnes	   5	   Susceptible to rutting and wheel slippage
Grygla	   5	Wetness
Haug	   5 	   Wetness   Susceptible to rutting and wheel slippage
481: Kratka	85	   Wetness
Northwood	   5 	   Wetness   Susceptible to rutting and wheel slippage
Percy	5	   Wetness   Susceptible to rutting and wheel slippage
Enstrom	3	No major considerations
Strandquigt	2	Wotness
Strandquist	2   	Wetness   Susceptible to rutting and wheel slippage 
482:	İ	
Grygla	85	Wetness
Chilgren	5	Wetness   Susceptible to rutting and wheel slippage
Grygla, depressional	   5 	   Wetness 

Table 15.--Forest Log Landing Considerations--Continued

Map symbol	Percent	Forest log landing
and	of	considerations
component name	map unit	
482:		
Enstrom	3	No major considerations
Northwood	2	Wetness
		Susceptible to rutting and wheel slippage
534:		 
Mooselake	90	Wetness
į		Susceptible to rutting and wheel slippage
Bullwinkle	4	Wetness   Susceptible to rutting and wheel slippage
i		susceptible to lutting and wheel slippage
Dora	3	Wetness
ļ		Susceptible to rutting and wheel slippage
Marsa 2	2	Watersan
Tawas	3	Wetness   Susceptible to rutting and wheel slippage
i		
541:		
Rifle	90	Wetness
ļ		Susceptible to rutting and wheel slippage
Tacoosh	10	Wetness
į		Susceptible to rutting and wheel slippage
543:   Markey	90	Wetness
markey	30	Susceptible to rutting and wheel slippage
į		
Cormant	5	Wetness
  Seelyeville	5	Wetness
	3	Susceptible to rutting and wheel slippage
į		
544:	0.0	. Water and
Cathro	90	Wetness   Susceptible to rutting and wheel slippage
i		
Percy, very cobbly	4	Wetness
		Susceptible to rutting and wheel slippage
  Grygla	3	Wetness
	3	
Seelyeville	3	Wetness
		Susceptible to rutting and wheel slippage
546:		
Lupton	90	Wetness
I		Susceptible to rutting and wheel slippage
  Bullwinkle	A	Wetness
DUITMIUKIE	4	Wetness   Susceptible to rutting and wheel slippage
i		
Dora	3	Wetness
		Susceptible to rutting and wheel slippage
   Tawas	3	Wetness
	-	Susceptible to rutting and wheel slippage
į		

Table 15.--Forest Log Landing Considerations--Continued

Map symbol	Percent	Forest log landing
and	of	considerations
component name	map unit	<u> </u>
561:		 
Bullwinkle	90	   Wetness
		Susceptible to rutting and wheel slippage
i		
Lupton	4	Wetness
		Susceptible to rutting and wheel slippage
Northwood, wooded	4	Wetness
		Susceptible to rutting and wheel slippage
Chilgren	2	   Wetness
	-	Susceptible to rutting and wheel slippage
i		
563:		
Northwood	90	Wetness
		Susceptible to rutting and wheel slippage
Grygla	4	Wetness
Berner	3	   Wetness
berner	3	Susceptible to rutting and wheel slippage
Strandquist	3	Wetness
		Susceptible to rutting and wheel slippage
565:		
Eckvoll	85	No major considerations
Chilgren	5	   Wetness
Chrigien	3	Susceptible to rutting and wheel slippage
Grygla	5	Wetness
Hiwood	5	No major considerations
560		
569: Wabanica	85	   Wetness
Wabanica	03	Susceptible to rutting and wheel slippage
Warroad	6	Wetness
İ		
Sax	4	Wetness
		Susceptible to rutting and wheel slippage
Conne	2	Mahaara
Grano	3	Wetness   Susceptible to rutting and wheel slippage
		Susceptible to lutting and wheel slippage
Enstrom	2	No major considerations
i		
570:		
Faunce	85	No major considerations
	-	
Clearriver	7	No major considerations
Zimmerman	4	No major considerations
2 THIMIC THIGHT	±	No major considerations
Meehan	3	   Wetness
	-	-
Pits, gravel	1	Not rated
1		

Table 15.--Forest Log Landing Considerations--Continued

Map symbol	Percent	Forest log landing
and	of	considerations
component name	map unit	
583:		
Nereson	85	No major considerations
Percy	10	Wetness   Susceptible to rutting and wheel slippage
Pelan	3	   No major considerations 
Foxhome	2	No major considerations
627:		
Tawas	90	Wetness   Susceptible to rutting and wheel slippage
Leafriver	4	Wetness     Susceptible to rutting and wheel slippage
Lupton	4	   Wetness   Susceptible to rutting and wheel slippage
Cormant	2	Wetness
630:		 
Wildwood	90	Wetness   Susceptible to rutting and wheel slippage
Boash	4	   Wetness   Susceptible to rutting and wheel slippage
Dora	4	   Wetness   Susceptible to rutting and wheel slippage
Espelie	2	   Wetness 
643:		
Huot	85	No major considerations
Thiefriver	12	Wetness
Redby	3	Wetness
645:		 
Espelie	85	Wetness
Grano	5	Wetness   Susceptible to rutting and wheel slippage
Hilaire	5	   No major considerations
Wildwood	5	   Wetness   Susceptible to rutting and wheel slippage
651.		
651: Thiefriver	85	Wetness
Grano	5	   Wetness   Susceptible to rutting and wheel slippage
Huot	5	   No major considerations
Wildwood	5	   Wetness   Susceptible to rutting and wheel slippage 

Table 15.--Forest Log Landing Considerations--Continued

Map symbol	Percent	Forest log landing
and	of	considerations
component name	map unit	
	map anic	<u> </u>
T00		
708:		
Rushlake	85	No major considerations
Corliss	6	No major considerations
Redby	5	Wetness
Hangaard	3	Wetness
Pits, gravel	1	Not rated
721B:		
Corliss	85	No major considerations
332222		
Rushlake	10	No major considerations
Rushiake	10	NO major considerations
TT	4	   Makanan
Hangaard	4	Wetness
-1.		
Pits, gravel	1	Not rated
733:		
Berner	90	Wetness
		Susceptible to rutting and wheel slippage
Grygla	5	Wetness
Seelyeville	5	Wetness
		Susceptible to rutting and wheel slippage
737:		! 
Mahkonce	85	Susceptible to rutting and wheel slippage
Mankonce	03	basceptible to latting and wheel slippage
Augeneugh	10	Wetness
Auganaush	10	Wetness
		Susceptible to rutting and wheel slippage
	_	
Eckvoll	5	No major considerations
755:		
Woodslake	85	Wetness
		Susceptible to rutting and wheel slippage
Boash	8	Wetness
		Susceptible to rutting and wheel slippage
Wildwood	5	Wetness
		Susceptible to rutting and wheel slippage
Dora	2	Wetness
2014	_	Susceptible to rutting and wheel slippage
		busceptible to lutting and wheel slippage
767:		 
Auganaush	90	   Makanan
Auganausn	90	Wetness
		Susceptible to rutting and wheel slippage
Mustinka	5	Wetness
		Susceptible to rutting and wheel slippage
Wildwood	3	Wetness
		Susceptible to rutting and wheel slippage
j		
Mahkonce	2	Susceptible to rutting and wheel slippage
j		
'		

Table 15.--Forest Log Landing Considerations--Continued

Map symbol	Percent	Forest log landing
and	of	considerations
component name	map unit	
To 4		
794:	0.5	 
Clearriver	85	No major considerations
***************************************	_	 
Hiwood	7	No major considerations
March and	_	****
Meehan	5	Wetness
Barrara	3	   Wa madam mamaddamakdama
Faunce	3	No major considerations
1002:		 
Fluvaquents, frequently		 
flooded	90	   Flooding
1100404		Wetness
		Susceptible to rutting and wheel slippage
		saboopoisio so radding and whose simples
Seelyeville	6	Wetness
1		Susceptible to rutting and wheel slippage
Hapludalfs	2	Slope
		Susceptible to rutting and wheel slippage
Water	2	Not rated
1030:		
Pits, gravel	75	Not rated
Udipsamments	20	Slope
Corliss	2	No major considerations
Karlstad	2	No major considerations
Hangaard	1	   Wetness
nangaaru	_	Wethers
1067:		
Fluvaquents, frequently		
flooded	60	Flooding
		Wetness
		Susceptible to rutting and wheel slippage
Hapludalfs	30	Slope
		Susceptible to rutting and wheel slippage
Seelyeville	5	Wetness
		Susceptible to rutting and wheel slippage
Water	5	Not rated
11220.		
1133B: Skime	0.5	   Wa madan manadanakiana
Skime	85	No major considerations
Hiwood	10	   No major considerations
miwood	10	No major considerations
Zippel	5	Wetness
2 E	-	
1179B:	j	
Moranville	85	No major considerations
Baudette	5	Susceptible to rutting and wheel slippage
Hiwood	5	No major considerations
Spooner	5	Wetness
		Susceptible to rutting and wheel slippage
		I

Table 15.--Forest Log Landing Considerations--Continued

Map symbol	Percent	Forest log landing
and	of	considerations
component name	map unit	
		<u> </u>
1181:	 	 
Rosewood	50	Wetness
Ulen	40	No major considerations
	İ	
Redby	5	Wetness
Deerwood	3	Wetness
		Susceptible to rutting and wheel slippage
Syrene	2	Wetness
1182:		
Warroad	85	Wetness
Wahaniaa		Mahaana
Wabanica	7	Wetness
	l I	Susceptible to rutting and wheel slippage
Enstrom	   5	   No major considerations
EIISCIOIII	] 3 	NO Major considerations
Sax	l   3	   Wetness
Sax	] 	Netness   Susceptible to rutting and wheel slippage
	 	busceptible to latting and wheel slippage
1187:	 	
Dora, ponded	90	Wetness
		Susceptible to rutting and wheel slippage
Seelyeville, ponded	4	Wetness
		Susceptible to rutting and wheel slippage
Wildwood	4	Wetness
		Susceptible to rutting and wheel slippage
Boash	2	Wetness
		Susceptible to rutting and wheel slippage
1101		
1191: Sahkahtay	l   85	   Wetness
Sankantay	65	Susceptible to rutting and wheel slippage
	 	busceptible to latting and wheel slippage
Cormant	l 5	   Wetness
0021110110	J	
Deerwood	'   5	Wetness
		Susceptible to rutting and wheel slippage
	İ	
Karlstad	3	No major considerations
Redby	2	Wetness
1206:		
Cormant	55	Wetness
- "		
Redby	35	Wetness
Hiwood		No major gangidarations
HIWOUG	5 	No major considerations
Leafriver	l   5	   Wetness
	, J	wetness   Susceptible to rutting and wheel slippage
	! 	
1214:		
Mustinka	90	Wetness
		Susceptible to rutting and wheel slippage
Espelie	4	Wetness

Table 15.--Forest Log Landing Considerations--Continued

Map symbol and	Percent of	Forest log landing considerations
component name	map unit	considerations
1214:	İ	
Wildwood	4 	Wetness   Susceptible to rutting and wheel slippage
Dalbo	2	   Susceptible to rutting and wheel slippage
1274B:		 
Redby	40	Wetness
Hiwood	   30 	   No major considerations 
Leafriver, wooded	15	Wetness   Susceptible to rutting and wheel slippage
Clearriver	5	  No major considerations
Cormant	5	Wetness
Zimmerman	5	  No major considerations
1305:		
Hilaire	85	No major considerations
Espelie	11	Wetness
Grano	2	Wetness   Susceptible to rutting and wheel slippage
Redby	2	Wetness
1314:		
Tacoosh	90	Wetness   Susceptible to rutting and wheel slippage
Rifle	8	   Wetness   Susceptible to rutting and wheel slippage
Sax	2	   Wetness   Susceptible to rutting and wheel slippage
1327B:		
Karlstad	65	   No major considerations
Marquette	25	No major considerations
Sahkahtay	7	   Wetness   Susceptible to rutting and wheel slippage
Redby	   3	   Wetness
1328:		
Northwood, wooded	90	Wetness   Susceptible to rutting and wheel slippage
Berner, wooded	5	   Wetness   Susceptible to rutting and wheel slippage
Grygla	5	Wetness
1333:		 
Dora, wooded	90	   Wetness   Susceptible to rutting and wheel slippage
	1	I

Table 15.--Forest Log Landing Considerations--Continued

Map symbol	Percent	Forest log landing
and	of	considerations
component name	map unit	<u> </u>
1333:		
Lupton	4	Wetness
		Susceptible to rutting and wheel slippage
Wildwood	4	Wetness
		Susceptible to rutting and wheel slippage
Auganaush	2	Wetness
		Susceptible to rutting and wheel slippage
1399B:		
Two Inlets	85	No major considerations
Wurtsmith	6	No major considerations
Zimmerman	6	No major considerations
Meehan	3	Wetness
1401:		
Grygla, depressional	90	Wetness
	_	
Northwood, wooded	5	Wetness
		Susceptible to rutting and wheel slippage
Chilgren	3	Wetness
		Susceptible to rutting and wheel slippage
_		
Grygla	2	Wetness
1402:	0.0	
Leafriver, wooded	90	Wetness
		Susceptible to rutting and wheel slippage
Cormant	4	Wetness
Cormanc	<b>-</b>	wethess
Tawas	4	
iawas	_ <del>_</del>	Susceptible to rutting and wheel slippage
		busceptible to lutting and wheel slippage
Redby	2	Wetness
Keaby	_	Wethess
1404:		 
Berner, wooded	90	Wetness
Berner, wooded		Susceptible to rutting and wheel slippage
		babeepeible to lateling and wheel blippage
Lupton	4	Wetness
	<u>-</u>	Susceptible to rutting and wheel slippage
Northwood, wooded	4	Wetness
		Susceptible to rutting and wheel slippage
i		
Grygla	2	Wetness
1414:		
Nereson, very cobbly	85	No major considerations
i		
Percy, very cobbly	10	Wetness
i		Susceptible to rutting and wheel slippage
i		
Pelan	3	No major considerations
İ		
Foxhome	2	No major considerations

Table 15.--Forest Log Landing Considerations--Continued

of	considerations
map unit	<u> </u>
85	No major considerations
10	Wetness
2	No major considerations
2	No major considerations
_	
1	Wetness
90	Wetness
	Susceptible to rutting and wheel slippage
4	Wetness
	Susceptible to rutting and wheel slippage
4	 
4	Wetness   Susceptible to rutting and wheel slippage
	Susceptible to futting and wheel slippage
2	Wetness
85	Susceptible to rutting and wheel slippage
4.0	 
10	Wetness   Susceptible to rutting and wheel slippage
	Susceptible to futting and wheel slippage
3	No major considerations
2	No major considerations
90	Wetness
	Susceptible to rutting and wheel slippage
5	Wetness
-	
3	Wetness
	Susceptible to rutting and wheel slippage
2	Wetness
	2 2 1 90 4 4 4 2 85 10 3 2 90 5 3

Table 16.--Forest Land Site Preparation and Planting Considerations

(Only the soils that support vegetation suitable for forest land management are listed. See text for a description of the considerations listed in this table.)

Map symbol and	Percent of	Forest land site preparation and planting considerations
component name	map unit	Considerations
105		
48B: Hiwood	85	No major considerations
Redby	7	Wetness
Clearriver	3	No major considerations
Cormant	3	Wetness
Zimmerman	2	No major considerations
64:		
Ulen	85	No major considerations
Rosewood	10	Wetness
Redby	3	Wetness
Rushlake	2	No major considerations
77:		
Garnes	85	No major considerations
Chilgren	10	Wetness
Eckvoll	3	No major considerations
Pelan	2	No major considerations
111:     Hangaard	90	   Wetness
Deerwood	5	Wetness
Rushlake	3	No major considerations
Rosewood	2	Wetness
116:   Redby	85	Wetness
Cormant	8	Wetness
Hiwood	6	No major considerations
Leafriver	1	Wetness
117.		
117: Cormant	85	Wetness
Leafriver	7	Wetness
Epoufette	3	Wetness
Redby	3	Wetness
Grygla, depressional	2	Wetness

Table 16.--Forest Land Site Preparation and Planting Considerations--Continued

Map symbol and	Percent of	Forest land site preparation and planting   considerations
component name	map unit	
133:		 
Dalbo	85	No major considerations
Mustinka	10	Wetness   Potential poor tilth and compaction
Moranville	5	No major considerations
145:		
Enstrom	85	No major considerations
Grygla	10	Wetness
Redby	4	   Wetness
Pelan	1	   No major considerations 
147:		
Spooner	85	Wetness 
Baudette	5	No major considerations
Grygla	5	Wetness
Sago	5	   Wetness 
158B:	0.5	
Zimmerman	85	No major considerations
Hiwood	6	No major considerations
Two Inlets	6	No major considerations
Redby	3	   Wetness
167B:		
Baudette	85	No major considerations
Spooner	10	Wetness
Moranville	5	   No major considerations 
191:		
Epoufette	85	Wetness 
Cormant	5	Wetness
Leafriver	5	Wetness
Meehan	5	   Wetness 
202:		
Meehan	85	Wetness
Cormant	8	   Wetness
Wurtsmith	5	   No major considerations
Leafriver	2	Wetness
205:		 
Karlstad	85	No major considerations
Sahkahtay	7	   Wetness
		I

Table 16.--Forest Land Site Preparation and Planting Considerations--Continued

Map symbol	Percent	Forest land site preparation and planting
and	of	considerations
component name	map unit	
205:		
Marquette	5	   Water erosion
Redby	2	   Wetness
Pits, gravel	1	   Not rated 
242B:		
Marquette	85	Water erosion 
Karlstad	14	No major considerations
Pits, gravel	1	Not rated
280:		
Pelan	85	No major considerations
Strandquist	10	Wetness   Potential poor tilth and compaction
Garnes	3	   No major considerations
Marquette	1	   Water erosion
Pits, gravel	1	   Not rated
404:		
Chilgren	85	Wetness
Garnes	5	No major considerations
Grygla	5	Wetness
Haug	5	Wetness
481:		 
Kratka	85	Wetness
Northwood	5	Wetness
Percy	5	Wetness
		Potential poor tilth and compaction
Enstrom	3	No major considerations
Strandquist	2	Wetness   Potential poor tilth and compaction
482:		[ 
Grygla	85	Wetness
Chilgren	5	Wetness
Grygla, depressional	5	Wetness
Enstrom	3	   No major considerations
Northwood	2	Wetness
534:		 
Mooselake	90	Wetness
Bullwinkle	4	   Wetness
		I

Table 16.--Forest Land Site Preparation and Planting Considerations--Continued

Map symbol	Percent	Forest land site preparation and planting
and	of	considerations
component name	map unit	<u> </u>
534:	İ	
Dora	3	Wetness
W		I Water and
Tawas	3	Wetness
541:	İ	
Rifle	90	Wetness
Tacoosh	   10	   Wetness
14000311	10	Nechess
543:	ĺ	
Markey	90	Wetness
Cormant	   5	   Wetness
	İ	
Seelyeville	5	Wetness
544:	 	
Cathro	90	Wetness
Danier come sabble		Wetness
Percy, very cobbly	<b>4</b> 	Wetness   Cobbly surface
	İ	Potential poor tilth and compaction
Guaranta.		I Water and
Grygla	3 	Wetness
Seelyeville	3	Wetness
546:		
Lupton	90	   Wetness
-	İ	
Bullwinkle	4	Wetness
Dora	3	Wetness
Tawas	3	Wetness
561:	İ	
Bullwinkle	90	Wetness
Lupton	   4	   Wetness
•	İ	
Northwood, wooded	4	Wetness
Chilgren	   2	   Wetness
	ĺ	
563: Northwood	   90	   Wetness
NOT CHWOOD	30	Wethers
Grygla	4	Wetness
Berner	   3	   Wetness
permer	3	Wethers
Strandquist	3	Wetness
	 	Potential poor tilth and compaction
565:	İ	
Eckvol1	85	No major considerations
Chilgren	   5	   Wetness
Cm1191611		nechess
Grygla	5	Wetness
Hiwood	   5	No major considerations

Table 16.--Forest Land Site Preparation and Planting Considerations--Continued

Man gimbol	Percent	Forest land site preparation and planting
Map symbol   and	of	considerations
component name	map unit	
569:     Wabanica	85	   Wetness
	63	Potential poor tilth and compaction
Warroad	6	   Wetness 
Sax	4	Wetness
Grano	3	Wetness
Enstrom	2	No major considerations
570:		
Faunce	85	No major considerations
Clearriver	7	No major considerations
Zimmerman	4	No major considerations
Meehan	3	Wetness
Pits, gravel	1	Not rated 
583:		
Nereson	85	No major considerations
Percy    	10	Wetness   Potential poor tilth and compaction 
Pelan	3	  No major considerations
Foxhome	2	  No major considerations
627:		
Tawas	90	Wetness
Leafriver	4	Wetness
Lupton	4	Wetness
Cormant	2	Wetness
630:   Wildwood	90	Wetness
  Boash	4	   Wetness
		Potential poor tilth and compaction
Dora	4	Wetness
Espelie	2	Wetness
643:		
Huot	85	No major considerations
Thiefriver	12	Wetness
Redby	3	Wetness
645:		
Espelie	85	Wetness
Grano	5	Wetness

Table 16.--Forest Land Site Preparation and Planting Considerations--Continued

Map symbol and	Percent of	Forest land site preparation and planting considerations
component name	map unit	
	<del>-</del>	
645:		
Hilaire	5	No major considerations
Wildwood	   5	Wetness
651:		
Thiefriver	85	Wetness
Grano	5	Wetness
Huot	5	No major considerations
Wildwood	5	Wetness
708:		
Rushlake	85	No major considerations
Corliss	6	No major considerations
Redby	5 	Wetness
Hangaard	3	Wetness
Pits, gravel	1	Not rated
721B:		
Corliss	85	No major considerations
Rushlake	10	No major considerations
Hangaard	4	Wetness
Pits, gravel	1	Not rated
733:		
Berner	90	Wetness
Grygla	5	Wetness
Seelyeville	5	Wetness
737:	İ	
Mahkonce	85	Potential poor tilth and compaction
Auganaush	10	Wetness Potential poor tilth and compaction
Eckvoll	   5	   No major considerations
755:		
Woodslake	85	Wetness Potential poor tilth and compaction
Boash	   8 	   Wetness   Potential poor tilth and compaction
Wildwood	   5	Wetness
Dora	   2 	   Wetness
· ·	'	ı

Table 16.--Forest Land Site Preparation and Planting Considerations--Continued

Man manhal	l Dames t	Bound lond site opposition and planting
Map symbol and	Percent of	Forest land site preparation and planting   considerations
component name	map unit	
767:		
Auganaush	90   	Wetness   Potential poor tilth and compaction 
Mustinka	5	Wetness   Potential poor tilth and compaction
Wildwood	   3 	   Wetness 
Mahkonce	2	Potential poor tilth and compaction
794:		
Clearriver	85	No major considerations
Hiwood	7	No major considerations
Meehan	5	Wetness
Faunce	3	No major considerations
1002:	İ	
Fluvaquents, frequently		
flooded	90	Flooding   Wetness
Seelyeville	6	Wetness
Hapludalfs	2	Slope   Water erosion
Water	2	   Not rated
1030:		
Pits, gravel	75	Not rated
Udipsamments	20	Slope   Water erosion
Corliss	2	No major considerations
Karlstad	2	   No major considerations
Hangaard	1	   Wetness
1067:	 	[ 
Fluvaquents, frequently		
flooded	60	Flooding Wetness
Hapludalfs	30	   Slope   Water erosion
Seelyeville	5	Wetness
Water	5	   Not rated
1133B: Skime	85	 
Hiwood	10	   No major considerations
Zippel	5	   Wetness

Table 16.--Forest Land Site Preparation and Planting Considerations--Continued

Map symbol	Percent	Forest land site preparation and planting
and	of	considerations
component name	map unit	
1179B:		
Moranville	85	No major considerations
Baudette	5	No major considerations
Hiwood	5	No major considerations
Spooner	5	Wetness
1181:		
Rosewood	50	Wetness
_		
Ulen	40	No major considerations
	_	
Redby	5	Wetness
Deamard	2	Watersan
Deerwood	3	Wetness
Syrene	2	Wetness
Syrene	_ <b>_</b>	Wethess
1182:		 
Warroad	85	Wetness
Marroad	03	
Wabanica	7	Wetness
		Potential poor tilth and compaction
Enstrom	5	No major considerations
Sax	3	Wetness
1187:		
Dora, ponded	90	Wetness
Seelyeville, ponded	4	Wetness
Wildwood	4	Wetness
Boash	2	Wetness
		Potential poor tilth and compaction
1191:		 
Sahkahtay	85	Wetness
	33	
Cormant	5	Wetness
Deerwood	5	Wetness
Karlstad	3	No major considerations
Redby	2	Wetness
İ		
1206:		
Cormant	55	Wetness
Redby	35	Wetness
Hiwood	5	No major considerations
- 6.1	_	 
Leafriver	5	Wetness

Table 16.--Forest Land Site Preparation and Planting Considerations--Continued

and component name	of map unit	considerations
1214:	0.0	TV-4
Mustinka	90	Wetness Potential poor tilth and compaction
Espelie	4	Wetness
Wildwood	4	Wetness
Dalbo	2	No major considerations
1274B:	40	
Redby	40	Wetness
Hiwood	30	No major considerations
Leafriver, wooded	15	Wetness
Clearriver	5	No major considerations
Cormant	5	Wetness
Zimmerman	5	No major considerations
1305:		
Hilaire	85	No major considerations
Espelie	11	Wetness
Grano	2	Wetness
Redby	2	Wetness
1314:		
Tacoosh	90	Wetness
Rifle	8	Wetness
Sax	2	Wetness
1327B:		
Karlstad	65	No major considerations
Marquette	25	Water erosion
Sahkahtay	7	Wetness
Redby	3	Wetness
1328:		
Northwood, wooded	90	Wetness
Berner, wooded	5	Wetness
Grygla	5	Wetness
1333:		
Dora, wooded	90	Wetness
Lupton	4	Wetness
Wildwood	4	Wetness
Auganaush	2	Wetness Potential poor tilth and compaction

Table 16.--Forest Land Site Preparation and Planting Considerations--Continued

Map symbol	Percent	Forest land site preparation and planting
and	of	considerations
component name	map unit	
4000		
1399B:	0.5	 
Two Inlets	85	No major considerations
Wurtsmith	6	   No major considerations
WUI CSMICH	0	NO Major considerations
Zimmerman	6	   No major considerations
	· ·	
Meehan	3	Wetness
İ		
1401:		
Grygla, depressional	90	Wetness
Northwood, wooded	5	Wetness
Chilgren	3	Wetness
	•	
Grygla	2	Wetness
1402:		 
Leafriver, wooded	90	   Wetness
Healiivel, Wooded	30	Wethess
Cormant	4	   Wetness
Tawas	4	Wetness
İ		
Redby	2	Wetness
1404:		
Berner, wooded	90	Wetness
Lupton	4	Wetness
Northwood, wooded	4	   Wetness
Not thwood, wooded	-	Wethers
Grygla	2	Wetness
15		
1414:		
Nereson, very cobbly	85	Cobbly surface
Percy, very cobbly	10	Wetness
		Cobbly surface
		Potential poor tilth and compaction
Pollon	•	 
Pelan	3	No major considerations
Foxhome	2	   No major considerations
- OMIONG	4	10 major compractations
1444:		[ 
Wurtsmith	85	No major considerations
Meehan	10	Wetness
İ		
Clearriver	2	No major considerations
Two Inlets	2	No major considerations
Commont	-	Waters and
Cormant	1	Wetness
1808:		 
Markey, ponded	90	   Wetness
	20	
Leafriver	4	Wetness
j		
·		

Table 16.--Forest Land Site Preparation and Planting Considerations--Continued

Map symbol	Percent	Forest land site preparation and planting
and	of	considerations
component name	map unit	
1808:		
Seelyeville, ponded	4	Wetness
   Cormant	2	Wetness
1923B:		
Garnes, very stony	85	Surface stones   Cobbly surface
Chilgren	10	Wetness
Eckvoll	3	No major considerations
   Pelan	2	No major considerations
1984:		
Leafriver	90	Wetness
   Cormant	5	Wetness
   Markey	3	Wetness
Redby	2	Wetness

Table 17.--Recreational Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. See text for definitions of terms used in this table. Absence of an entry indicates that no rating is applicable.)

Map symbol and	Percent of	Camp areas	   Picnic areas	   Playgrounds	Paths and	   Golf fairways
component name	map unit				trails	
				İ	İ	İ
47:						
Colvin	85	Severe:	Severe:	Severe:	Severe:	Severe:
		wetness	wetness	wetness	wetness	wetness
Bearden	   5	  Moderate:	  Moderate:	  Moderate:	  Moderate:	  Moderate:
Bearden	5	percs slowly	percs slowly	wetness	wetness	wetness
		wetness	wetness			
	İ	İ	j	İ	j	İ
Grano	5	Severe:	Severe:	Severe:	Severe:	Severe:
		too clayey	too clayey	too clayey	too clayey	too clayey
	 	wetness	wetness	wetness	wetness	wetness
Sax	l l 5	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
	İ	excess humus	excess humus	excess humus	excess humus	excess humus
		ponding	ponding	ponding	ponding	ponding
	İ					İ
48B:					ļ	ļ
Hiwood	85	Severe:	Severe:	Severe:	Severe:	Moderate:
	 	too sandy	too sandy	too sandy	too sandy	droughty
Redby	   7	  Moderate:	  Moderate:	  Moderate:	  Moderate:	  Moderate:
•	i I	too sandy	too sandy	too sandy	too sandy	wetness
	j	wetness	wetness	wetness	wetness	droughty
			ļ	İ	İ	İ
Clearriver	3	Moderate:	Moderate:	Moderate:	Moderate:	Severe:
		too sandy	too sandy	small stones	too sandy	droughty
	 	 		too sandy		
Cormant	3	Severe:	Severe:	Severe:	Severe:	Severe:
	j	wetness	wetness	wetness	wetness	wetness
				-		
Zimmerman	2	Severe:	Severe:	Severe:	Severe:	Moderate:
	 	too sandy	too sandy	too sandy	too sandy	droughty
52:	 	 		i		
Augsburg	85	Severe:	Severe:	Severe:	Severe:	Severe:
		percs slowly	percs slowly	percs slowly	wetness	wetness
		wetness	wetness	wetness		1
Croke	   5	  Slight	  Slight	  Slight	  Slight	  Slight
Clore	5	BIIGHC				Silgic
Grano	,   5	Severe:	Severe:	Severe:	Severe:	Severe:
	İ	wetness	wetness	wetness	wetness	wetness
			ļ	İ	İ	İ
Sago	5	Severe:	Severe:	Severe:	Severe:	Severe:
		excess humus	excess humus	excess humus	excess humus	excess humus
	 	ponding	ponding	ponding	ponding	ponding
59:	! 	 				
Grimstad	85	Moderate:	Moderate:	Moderate:	Moderate:	Moderate:
	İ	wetness	wetness	wetness	wetness	wetness
				ļ	İ	İ
Strathcona	12	Severe:	Severe:	Severe:	Severe:	Severe:
	 	wetness	wetness	wetness	wetness	wetness
Foxhome	   3	  Slight	  Slight	  Slight	  Slight	  Slight

Table 17.--Recreational Development--Continued

Map symbol and component name	Percent of map unit	   Camp areas	   Picnic areas	   Playgrounds 	Paths and trails	   Golf fairways 
64:						
Ulen	85	  Slight 	  Slight 	  Slight 		  Moderate:   droughty
Rosewood	10	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness
Redby	3	  Moderate:   too sandy   wetness	Moderate:   too sandy   wetness	Moderate:   too sandy   wetness	Moderate:   too sandy   wetness	Moderate:   wetness   droughty
Rushlake	2	  Moderate:   too sandy   	Moderate:   too sandy 	Moderate:   small stones   too sandy	Moderate:   too sandy 	  Severe:   droughty 
65: Foxhome	85	  Slight	Slight	  Slight	  Slight	  Slight
Strandquist	12	  Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness
Skagen	3	  Slight 	  Slight 	  Moderate:   small stones	  Slight 	  Slight 
67: Bearden	85	  Moderate:   percs slowly   wetness	  Moderate:   percs slowly   wetness	Moderate:   wetness	  Moderate:   wetness	  Moderate:   wetness
Colvin	15	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness
77: Garnes	85	    Slight 	  Slight	  Moderate:   small stones	    Slight	    Slight 
Chilgren	10	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness
Eckvoll	3	  Moderate:   too sandy	  Moderate:   too sandy	  Moderate:   small stones	  Moderate:   too sandy	  Slight 
Pelan	2	  Slight 	  Slight 	  Moderate:   small stones	  Slight 	  Moderate:   droughty
111: Hangaard	90	    Severe:   wetness 	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness   droughty
Deerwood	5	  Severe:   excess humus   ponding	Severe:   excess humus   ponding	  Severe:   excess humus   ponding	Severe:   excess humus   ponding	  Severe:   excess humus   ponding
Rushlake	3	  Moderate:   too sandy 	Moderate:   too sandy	Moderate:   small stones   too sandy	Moderate:   too sandy	  Severe:   droughty
Rosewood	2	  Severe:   wetness	Severe:   wetness	Severe:	Severe:   wetness	  Severe:   wetness

Table 17.--Recreational Development--Continued

	Percent					
Map symbol and component name	of map unit	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
116:	 	 			I I	
Redby	   85   	Moderate:   too sandy   wetness	Moderate: too sandy wetness	Moderate:   too sandy   wetness	Moderate: too sandy wetness	Moderate:   wetness   droughty
Cormant	   8 	  Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness
Hiwood	   6 	  Severe:   too sandy	  Severe:   too sandy	  Severe:   too sandy	  Severe:   too sandy	  Moderate:   droughty
Leafriver	   1 	  Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
117:	 	 				
Cormant	   85 	  Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness
Leafriver	7   7 	  Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
Epoufette	   3 	  Severe:   wetness	Severe:   wetness	Severe:   small stones   wetness	Severe:   wetness	Severe:   wetness   droughty
Redby	   3 	  Moderate:   too sandy   wetness	Moderate:   too sandy   wetness	  Moderate:   too sandy   wetness	Moderate:   too sandy   wetness	  Moderate:   wetness   droughty
Grygla, depressional	   2 	  Severe:   ponding	  Severe:   ponding	  Severe:   ponding	  Severe:   ponding	  Severe:   ponding
133:	 	 				
Dalbo	   85	  Slight	Slight	Slight	Slight	Slight
Mustinka	   10 	  Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness
Moranville	   5 	  Moderate:   percs slowly 	Moderate:   percs slowly	Moderate:   percs slowly   slope	Slight	Moderate:   droughty
145:	 	 				
Enstrom	   85 	  Moderate:   percs slowly	Moderate:   percs slowly	Moderate:   percs slowly	  Slight 	Moderate:   droughty
Grygla	   10 	  Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness
Redby	   <b>4</b> 	  Moderate:   too sandy   wetness	Moderate: too sandy wetness	Moderate:   too sandy   wetness	Moderate: too sandy wetness	Moderate:   wetness   droughty
Pelan	   1 	  Slight   	  Slight 	  Moderate:   small stones	  Slight 	  Moderate:   droughty
147:		İ	i		i	
Spooner	85	Severe:	Severe:	Severe:	Severe:	Severe:
Baudette	     5	wetness    Slight	wetness    Slight	wetness    Moderate:	wetness    Slight	wetness    Slight
	 	 		slope		

Table 17.--Recreational Development--Continued

	Percent		1			
Map symbol and component name	of map unit	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
147:		 				
Grygla	5	Severe:	Severe:	Severe:	Severe:	Severe:
		wetness	wetness	wetness	wetness	wetness
Sago	   5 	  Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
158B: Zimmerman	     85	    Severe:   too sandy	  Severe:   too sandy	Severe:	  Severe:   too sandy	  Moderate:   droughty
Hiwood	6	  Severe:   too sandy	Severe:   too sandy	Severe:   too sandy	Severe:   too sandy	  Moderate:   droughty
Two Inlets	6	  Moderate:   small stones   too sandy	Moderate:   small stones   too sandy	Severe:   small stones	Moderate:   too sandy	Moderate:   small stones   droughty
Redby	3	  Moderate:   too sandy   wetness	Moderate:   too sandy   wetness	Moderate:   too sandy   wetness	Moderate:   too sandy   wetness	Moderate:   wetness   droughty
167B:		 			l I	
Baudette	85	  Slight 	Slight	Moderate:   slope	Slight	Slight
Spooner	10	  Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:	Severe:   wetness
Moranville	5	  Moderate:   percs slowly 	Moderate:   percs slowly	Moderate:   percs slowly   slope	Slight 	  Moderate:   droughty
187: Haug	90	  Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	  Severe:   excess humus   ponding	  Severe:   excess humus   ponding
Percy	5	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness	Severe:	  Severe:   wetness
Cathro	   3 	  Severe:   excess humus   ponding	Severe:   excess humus   ponding	  Severe:   excess humus   ponding	Severe:   excess humus   ponding	  Severe:   excess humus   ponding
Boash	2	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness	Severe:   wetness	  Severe:   wetness
191:		 			1	
Epoufette	85	Severe:   wetness	Severe:   wetness	Severe:   small stones   wetness	Severe:   wetness	Severe:   wetness   droughty
Cormant	5	  Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:	Severe:   wetness
Leafriver	5	  Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
Meehan	5	  Severe:   wetness   too acid 	Severe:   too acid 	Severe:   wetness   too acid	  Moderate:   too sandy   wetness	Severe:   too acid

Table 17.--Recreational Development--Continued

	Percent		1			
Map symbol and component name	of map unit	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
202:		 				
Meehan	   85 	Severe:   wetness   too acid	Severe:   too acid 	Severe:   wetness   too acid	Moderate:   too sandy   wetness	Severe:   too acid
Cormant	   8 	  Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness
Wurtsmith	5	  Moderate:   too sandy 	  Moderate:   too sandy 	Moderate:   small stones   too sandy	Moderate:   too sandy	Moderate:   droughty
Leafriver	   2 	  Severe:   excess humus   ponding	  Severe:   excess humus   ponding	Severe:   excess humus   ponding	  Severe:   excess humus   ponding	Severe:   excess humus   ponding
205:						
Karlstad	85 	Slight   	Slight 	Slight 	Slight 	Moderate:   droughty
Sahkahtay	7   7	  Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness
Marquette	5	  Slight   	Slight   	Moderate:   slope   small stones	Slight   	Severe:   droughty
Redby	2	  Moderate:   too sandy   wetness	Moderate:   too sandy   wetness	Moderate:   too sandy   wetness	Moderate:   too sandy   wetness	Moderate:   wetness   droughty
Pits, gravel	1	   				
242B: Marquette	85	  Slight 	  Slight 	Moderate:   slope   small stones	  Slight 	Severe:   droughty
Karlstad	   14 	  Slight 	  Slight 	  Slight 	  Slight 	  Moderate:   droughty
Pits, gravel	1	   				
280:						
Pelan	85	Slight 	Slight	Moderate:   small stones	Slight	Moderate:   droughty
Strandquist	   10 	  Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness
Garnes	3	  Slight 	  Slight 	Moderate:   small stones	Slight 	  Slight 
Marquette	1	  Slight     	  Slight     	Moderate:   slope   small stones	  Slight     	Severe:   droughty
Pits, gravel	1	   				

Table 17.--Recreational Development--Continued

****	Percent		   P//	71		
Map symbol and component name	of map unit	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
379:						
Percy, very cobbly	90	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
reicy, very combry	30	wetness	wetness	wetness	wetness	wetness
Boash	3	  Severe:	Severe:	Severe:	Severe:	Severe:
		wetness	wetness	wetness	wetness	wetness
Strandquist	3	  Severe:	Severe:	Severe:	  Severe:	  Severe:
		wetness	wetness	wetness	wetness	wetness
Haug	2	  Severe:	Severe:	  Severe:	  Severe:	  Severe:
į		excess humus	excess humus	excess humus	excess humus	excess humus
		ponding	ponding	ponding	ponding	ponding
Skagen, very cobbly	2	  Slight   	Slight	Moderate:   small stones	  Slight 	Slight 
383:				i	j	i
Percy	90	Severe:   wetness	Severe:	Severe:   wetness	Severe:	Severe:
		wechess	wechess	wechess	wechess	wechess
Boash	3	Severe:	Severe:	Severe:	Severe:	Severe:
		wetness	wetness	wetness	wetness	wetness
Strandquist	3	Severe:	Severe:	Severe:	Severe:	Severe:
		wetness	wetness	wetness	wetness	wetness
Haug	2	  Severe:	Severe:	Severe:	Severe:	Severe:
		excess humus	excess humus	excess humus	excess humus	excess humus
		ponding 	ponding	ponding	ponding	ponding
Skagen	2	Slight	Slight	Moderate:   small stones	Slight	Slight
384:		 				
Percy, depressional	85	Severe:	Severe:	Severe:	Severe:	Severe:
		ponding	ponding	ponding	ponding	ponding
   Haug	7	  Severe:	Severe:	Severe:	Severe:	Severe:
ļ.		excess humus	excess humus	excess humus	excess humus	excess humus
		ponding	ponding	ponding	ponding	ponding
Percy	5	Severe:	Severe:	Severe:	Severe:	Severe:
		wetness	wetness	wetness	wetness	wetness
Boash	3	  Severe:	Severe:	Severe:	  Severe:	  Severe:
į		wetness	wetness	wetness	wetness	wetness
387:		 				
Roliss, depressional	85	Severe:	Severe:	Severe:	Severe:	Severe:
Ī		ponding	ponding	ponding	ponding	ponding
   Haug	10	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
į		excess humus	excess humus	excess humus	excess humus	excess humus
I		ponding	ponding	ponding	ponding	ponding
1					1	
   Roliss	5	  Severe:	  Severe:	Severe:	Severe:	Severe:

Table 17.--Recreational Development--Continued

	D	1				
Map symbol and component name	Percent of map unit	   Camp areas 	   Picnic areas	   Playgrounds	Paths and trails	   Golf fairways
404:						
Chilgren	   85 	  Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness
Garnes	   5 	  Slight 	  Slight 	  Moderate:   small stones	  Slight 	  Slight 
Grygla	   5 	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness
Haug	   5   	  Severe:   excess humus   ponding	Severe:   excess humus   ponding			
412:	! 	 				
Mavie	85	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness
Foxhome	   5 	  Slight 	  Slight 	  Slight 	  Slight 	  Slight 
Northwood	5   	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
Percy, very cobbly	5	Severe:	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness
432:	 	 				
Strandquist	   85 	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness
Percy, very cobbly	   5 	  Severe:   wetness		  Severe:   wetness	  Severe:   wetness	
Haug	   <b>4</b> 	  Severe:   excess humus   ponding	Severe:   excess humus   ponding			
Boash	   3 	  Severe:   wetness		  Severe:   wetness	  Severe:   wetness	  Severe:   wetness
Foxhome	   3 	  Slight 	  Slight 	  Slight 	  Slight 	  Slight 
433:	ĺ	İ	İ			
Syrene, depressional	85   	Severe:   ponding	Severe:   ponding	Severe:   ponding	Severe:   ponding	Severe:   ponding
Deerwood	5   	Severe:   excess humus   ponding	Severe: excess humus ponding	Severe:   excess humus   ponding	Severe: excess humus ponding	Severe: excess humus ponding
Rosewood	   5 	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness
Syrene	   5 	  Severe:   wetness	Severe:   wetness	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness
435:	 	 				
Syrene	   85	  Severe:	  Severe:	Severe:	  Severe:	  Severe:
-	İ	wetness	wetness	wetness	wetness	wetness
Rosewood	   5 	  Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness

Table 17.--Recreational Development--Continued

Map symbol and	Percent   of	   Camp areas	Picnic areas	Playgrounds	Paths and	   Golf fairways
component name	map unit	1	1	1	trails	1
435:	 	 	1			
Syrene, depressional	l 5	  Severe:	Severe:	Severe:	Severe:	Severe:
sizono, dopiossional		ponding	ponding	ponding	ponding	ponding
Karlsruhe	3	Moderate:	Moderate:	Moderate:	Moderate:	Moderate:
		wetness	wetness	small stones	wetness	wetness
				wetness		droughty
Deerwood	   2	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
	. – I	excess humus	excess humus	excess humus	excess humus	excess humus
		ponding	ponding	ponding	ponding	ponding
439:						
Strathcona	   85	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
beraencona	03 	wetness	wetness	wetness	wetness	wetness
Northwood	5	Severe:	Severe:	Severe:	Severe:	Severe:
		excess humus	excess humus	excess humus	excess humus	excess humus
	 	ponding	ponding	ponding	ponding	ponding
Percy	   5	  Severe:	Severe:	Severe:	Severe:	Severe:
		wetness	wetness	wetness	wetness	wetness
Grimstad	   3	  Moderate:	  Moderate:	  Moderate:	  Moderate:	  Moderate:
GIIMS CAG	3	wetness	wetness	wetness	wetness	wetness
	İ	İ	j	j	j	i
Strandquist	2	Severe:	Severe:	Severe:	Severe:	Severe:
	 	wetness	wetness	wetness	wetness	wetness
481:	 	 				
Kratka	85	Severe:	Severe:	Severe:	Severe:	Severe:
		wetness	wetness	wetness	wetness	wetness
Northwood	   5	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
		excess humus	excess humus	excess humus	excess humus	excess humus
		ponding	ponding	ponding	ponding	ponding
Percy	   5	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
reicy	5	wetness	wetness	wetness	wetness	wetness
	İ	İ	j	j	İ	İ
Enstrom	3	Moderate:	Moderate:	Moderate:	Slight	Moderate:
	 	percs slowly	percs slowly	percs slowly		droughty
Strandquist	2	Severe:	Severe:	Severe:	Severe:	Severe:
		wetness	wetness	wetness	wetness	wetness
482:	 	İ	1			
Grygla	   85	  Severe:	Severe:	Severe:	Severe:	Severe:
13		wetness	wetness	wetness	wetness	wetness
-1.17	_					
Chilgren	5 	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness
	 	wechess	wechess	wechess	wechess	wethess
Grygla, depressional	5	Severe:	Severe:	Severe:	Severe:	Severe:
		ponding	ponding	ponding	ponding	ponding
Enstrom	   3	  Moderate:	  Moderate:	  Moderate:	  Slight	  Moderate:
LING CI OM	, J	percs slowly	percs slowly	percs slowly		droughty
	İ				į	
Northwood	2	Severe:	Severe:	Severe:	Severe:	Severe:
		excess humus	excess humus	excess humus	excess humus	excess humus
	 	ponding	ponding	ponding	ponding	ponding
	I	I	1	I	T	I

Table 17.--Recreational Development--Continued

Map symbol and component name	Percent of map unit	   Camp areas	   Picnic areas 	   Playgrounds	Paths and trails	   Golf fairways
			Ţ.	!	Ţ.	!
532: Sago	90	Severe: excess humus ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
Cathro	5	Severe: excess humus ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
Zippel	5	Severe: wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness
534:						
Mooselake	90	Severe: excess humus wetness	Severe:   excess humus   wetness	Severe:   excess humus   wetness	Severe:   excess humus   wetness	Severe:   excess humus   wetness
Bullwinkle	4	Severe:   excess humus   wetness	Severe:   excess humus   wetness	Severe:   excess humus   wetness	Severe:   excess humus   wetness	Severe:   excess humus   wetness
Dora	3	Severe: excess humus ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
Tawas	3	Severe: excess humus wetness	Severe:   excess humus   wetness	Severe:   excess humus   wetness	Severe:   excess humus   wetness	Severe:   excess humus   wetness
540:			1			
Seelyeville	90	Severe: excess humus ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
Cathro	4	Severe: excess humus ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
Dora	3	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
Markey	3	Severe: excess humus ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
541:						
Rifle	90	Severe: excess humus ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
Tacoosh	10	Severe: excess humus ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
543:						
Markey	90	Severe: excess humus ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
Cormant	5	Severe:   wetness	  Severe:   wetness		  Severe:   wetness	

Table 17.--Recreational Development--Continued

1	Percent		ļ		İ	!
Map symbol and component name	of map unit	Camp areas	Picnic areas	Playgrounds	Paths and   trails	Golf fairways
543:		 	1			
Seelyeville	5	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
544:		l I				
Cathro	90	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
Percy, very cobbly	4	  Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness
Grygla	3	  Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness
Seelyeville	3	  Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
546:						
Lupton	90	Severe:   excess humus   wetness	Severe:   excess humus   wetness	Severe:   excess humus   wetness	Severe:   excess humus   wetness	Severe:   excess humus   wetness
Bullwinkle	4	Severe:   excess humus   wetness	Severe:   excess humus   wetness	Severe:   excess humus   wetness	Severe:   excess humus   wetness	Severe:   excess humus   wetness
Dora	3	  Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
Tawas	3	  Severe:   excess humus   wetness	Severe:   excess humus   wetness	Severe:   excess humus   wetness	Severe:   excess humus   wetness	Severe:   excess humus   wetness
5 <b>47:</b>		 				
Deerwood	90	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
Markey	4	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
Rosewood	3	  Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness
Syrene	3	  Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness
550: Dora	90	    Severe:   excess humus   ponding	  Severe:   excess humus   ponding	Severe:   excess humus   ponding	  Severe:   excess humus   ponding	  Severe:   excess humus   ponding
Boash	4	  Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness
Seelyeville	3	  Severe:   excess humus   ponding	  Severe:   excess humus   ponding	  Severe:   excess humus   ponding	  Severe:   excess humus   ponding	  Severe:   excess humus   ponding

Table 17.--Recreational Development--Continued

	Percent					
Map symbol and component name	of map unit	Camp areas	Picnic areas	Playgrounds	Paths and   trails	Golf fairways
550:	 	 				
Woodslake	3   	Severe:   percs slowly   too clayey   ponding	Severe:   percs slowly   too clayey   ponding	Severe:   percs slowly   too clayey   ponding	Severe:   too clayey   ponding	Severe:   too clayey   ponding
561:	 					
Bullwinkle	90	Severe:   excess humus   wetness	Severe:   excess humus   wetness	Severe:   excess humus   wetness	Severe:   excess humus   wetness	Severe:   excess humus   wetness
Lupton	   <b>4</b> 	Severe:   excess humus   wetness	Severe:   excess humus   wetness	Severe:   excess humus   wetness	Severe:   excess humus   wetness	Severe:   excess humus   wetness
Northwood, wooded	   <b>4</b> 	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
Chilgren	   2 	  Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness
563:	 	 				
Northwood	90	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
Grygla	   <b>4</b> 	  Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness
Berner	   3 	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
Strandquist	   3 	  Severe:   wetness	Severe:   wetness	Severe:   wetness		  Severe:   wetness
565:	 	 				
Eckvoll	   85 	  Moderate:   too sandy	Moderate:   too sandy	Moderate:	Moderate:   too sandy	Slight 
Chilgren	5   	  Severe:   wetness	Severe:   wetness	Severe:	Severe:   wetness	Severe:   wetness
Grygla	5   5	  Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness
Hiwood	   5 	  Severe:   too sandy	Severe:	Severe:	Severe:	Moderate:   droughty
568:						
Zippel	85 	Severe:   wetness	Severe:	Severe:	Severe:   wetness	Severe:   wetness
Augsburg, depressional-	   5 	  Severe:   percs slowly   ponding	Severe:   percs slowly   ponding	Severe:   percs slowly   ponding	Severe:   ponding	Severe:   ponding
Sago	   5 	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
Skime	   5 	  Slight   	  Slight 	Moderate:   slope	  Slight 	Moderate:   droughty

Table 17.--Recreational Development--Continued

	Percent			1	[	
Map symbol and component name	of map unit	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
569:		l I			1	
Wabanica	85	  Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness
Warroad	   6 	  Severe:   wetness	  Severe:   wetness	Severe:   wetness	  Severe:   wetness	Severe:   wetness
Sax	   4 	  Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
Grano	   3 	  Severe:   wetness	  Severe:   wetness	Severe:   wetness	  Severe:   wetness	Severe:   wetness
Enstrom	2   	  Moderate:   percs slowly 	  Moderate:   percs slowly	Moderate:   percs slowly	  Slight   	Moderate:   droughty
570:						
Faunce	85 	Slight   	Slight   	Moderate:   small stones	Slight   	Severe:   droughty
Clearriver	7	  Moderate:   too sandy 	Moderate:   too sandy 	Moderate:   small stones   too sandy	Moderate:   too sandy 	Severe:   droughty
Zimmerman	   4 	  Severe:   too sandy	  Severe:   too sandy	Severe:   too sandy	  Severe:   too sandy	Moderate:   droughty
Meehan	3	  Severe:   wetness   too acid	Severe:   too acid 	Severe:   wetness   too acid	Moderate:   too sandy   wetness	Severe:   too acid
Pits, gravel	   1 	   	 		   	
581:		İ	İ	İ	İ	İ
Percy	90   	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness
Haug	5	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
Boash	3	  Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness
Skagen	2	  Slight 	  Slight 	Moderate:	  Slight 	Slight
582:		I 				
Roliss	85	  Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness
Roliss, depressional	7	Severe:   ponding	Severe:   ponding	Severe:   ponding	Severe:   ponding	Severe:   ponding
Boash	   5 	  Severe:   wetness	  Severe:   wetness	Severe:   wetness	  Severe:   wetness	Severe:   wetness
Haug	3	  Severe:   excess humus   ponding	  Severe:   excess humus   ponding	Severe:   excess humus   ponding	  Severe:   excess humus   ponding	Severe:   excess humus   ponding

Table 17.--Recreational Development--Continued

	Percent					
Map symbol and	of	Camp areas	Picnic areas	Playgrounds	Paths and	Golf fairways
component name	map unit	<u> </u>	1	1	trails	1
583:	 	 				
Nereson	   85	  Slight	Slight	Moderate:	Slight	Slight
				small stones		
Percy	   10	  Severe:	  Severe:	Severe:	  Severe:	  Severe:
		wetness	wetness	wetness	wetness	wetness
Pelan	3	Slight 	Slight 	Moderate:   small stones	Slight	Moderate:   droughty
Foxhome	   2 	  Slight 	  Slight	  Slight	  Slight	  Slight
627:	 	 				
Tawas	90	Severe:	Severe:	Severe:	Severe:	Severe:
	İ	excess humus	excess humus	excess humus	excess humus	excess humus
		wetness	wetness	wetness	wetness	wetness
Leafriver	   4	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
Hearriver	<del>*</del> 	excess humus	excess humus	excess humus	excess humus	excess humus
	 	ponding	ponding	ponding	ponding	ponding
İ						
Lupton	4	Severe:	Severe:	Severe:	Severe:	Severe:
		excess humus	excess humus	excess humus	excess humus	excess humus
	 	wetness	wetness	wetness	wetness	wetness
Cormant	l   2	  Severe:	Severe:	Severe:	Severe:	  Severe:
	- 	wetness	wetness	wetness	wetness	wetness
İ		İ	İ	İ	İ	İ
630:						
Wildwood	90	Severe:	Severe:	Severe:	Severe:	Severe:
	 	excess humus ponding	excess humus ponding	excess humus ponding	excess humus	excess humus
		ponding	ponding	ponding	ponding	ponding
Boash	4	Severe:	Severe:	Severe:	Severe:	Severe:
		wetness	wetness	wetness	wetness	wetness
Dora	   4	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
DOTA	<del>*</del> 	excess humus	excess humus	excess humus	excess humus	excess humus
	! 	ponding	ponding	ponding	ponding	ponding
İ		İ				İ
Espelie	2	Severe:	Severe:	Severe:	Severe:	Severe:
	 	wetness	wetness	wetness	wetness	wetness
643:	 	 				
Huot	85	Slight	Slight	Moderate:	Slight	Moderate:
İ		İ	İ	small stones	İ	droughty
Thiefriver	12	Severe:   wetness	Severe:	Severe:   wetness	Severe:   wetness	Severe:
		wethess	wechess	wethess	wechess	wechess
Redby	3	Moderate:	Moderate:	Moderate:	Moderate:	Moderate:
İ		too sandy	too sandy	too sandy	too sandy	wetness
		wetness	wetness	wetness	wetness	droughty
644:	 	 				
Boash	   85	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
	55	wetness	wetness	wetness	wetness	wetness
					İ	
Percy	7	Severe:	Severe:	Severe:	Severe:	Severe:
		wetness	wetness	wetness	wetness	wetness

Table 17.--Recreational Development--Continued

	Percent		[		]	
Map symbol and component name	of map unit	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
644:	 	 			 	
Woodslake	5	Severe:   percs slowly   too clayey   ponding	Severe:   percs slowly   too clayey   ponding	Severe:   percs slowly   too clayey   ponding	Severe:   too clayey   ponding	Severe:   too clayey   ponding
Strandquist	   3 	  Severe:   wetness	Severe:   wetness	  Severe:   wetness		  Severe:   wetness
645:		 				
Espelie	85 	  Severe:   wetness	Severe:	Severe:   wetness	Severe:   wetness	Severe:   wetness
Grano	5	  Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness
Hilaire	5	  Slight 	Slight 	Moderate:   small stones	Slight 	Moderate:   droughty
Wildwood	5	  Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
651:						
Thiefriver	85   	Severe:   wetness 	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness
Grano	5	  Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness
Huot	5   5	  Slight 	  Slight 	Moderate:   small stones	  Slight 	Moderate:   droughty
Wildwood	5	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
708:	 	 				
Rushlake	85   	Moderate:   too sandy 	Moderate:   too sandy 	Moderate:   small stones   too sandy	Moderate: too sandy	Severe:
Corliss	6   	  Moderate:   too sandy 	Moderate:   too sandy 	Moderate:   slope   small stones	Moderate:   too sandy	Severe:   droughty
Redby	5   5	  Moderate:   too sandy   wetness	Moderate:   too sandy   wetness	Moderate:   too sandy   wetness	Moderate:   too sandy   wetness	Moderate:   wetness   droughty
Hangaard	   3 	  Severe:   wetness 	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness   droughty
Pits, gravel	   1 	   				
712: Rosewood	   85 	    Severe:   wetness	  Severe:   wetness	Severe:   wetness	Severe:   wetness	  Severe:   wetness
Deerwood	   6   	  Severe:   excess humus   ponding 	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding

Table 17.--Recreational Development--Continued

Map symbol and component name	Percent   of   map unit	   Camp areas 	   Picnic areas 	   Playgrounds 	Paths and trails	   Golf fairways 
			ļ.	Ţ	ļ	!
712: Hangaard	   5 	  Severe:   wetness 	  Severe:   wetness	Severe:   wetness	Severe:   wetness	  Severe:   wetness   droughty
Ulen	   <b>4</b> 	  Slight 	  Slight 	  Slight 	  Slight 	  Moderate:   droughty
721B:	 	 				
Corliss	   85 	  Moderate:   too sandy 	Moderate:   too sandy	Moderate:   slope   small stones	Moderate:	Severe:   droughty
Rushlake	   10 	  Moderate:   too sandy 	  Moderate:   too sandy	Moderate:   small stones   too sandy	Moderate:   too sandy	Severe:   droughty
Hangaard	   4 	Severe:   wetness	  Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness   droughty
Pits, gravel	   1	 				
733:	 	 				
Berner	90   	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
Grygla	   5 	  Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness
Seelyeville	   5 	  Severe:   excess humus   ponding	  Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	
737:	 	 				
Mahkonce	85	Slight	Slight	Slight	Slight	Slight
Auganaush	   10 	  Severe:   wetness	Severe:   wetness	  Severe:   wetness	Severe:   wetness	  Severe:   wetness
Eckvoll	   5 	  Moderate:   too sandy	  Moderate:   too sandy	Moderate:   small stones	Moderate:	  Slight 
755:	 	 				
Woodslake	85   	Severe:   percs slowly   too clayey   ponding	Severe:   percs slowly   too clayey   ponding	Severe:   percs slowly   too clayey   ponding	Severe:   too clayey   ponding	Severe:   too clayey   ponding
Boash	   8 	  Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness
Wildwood	   5 	  Severe:   excess humus   ponding	  Severe:   excess humus   ponding	  Severe:   excess humus   ponding	Severe:   excess humus   ponding	  Severe:   excess humus   ponding
Dora	2   2	  Severe:   excess humus   ponding	  Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding

Table 17.--Recreational Development--Continued

Map symbol and	Percent of map unit	   Camp areas	   Picnic areas	   Playgrounds	Paths and trails	   Golf fairways
component name	map unit	l	1	<u> </u>	trails	<u> </u>
767:		 				
Auganaush	90	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness
Mustinka	5	  Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness
Wildwood	3	  Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
Mahkonce	2	  Slight 	Slight	Slight	Slight	  Slight 
794:			İ		İ	
Clearriver	85	Moderate:   too sandy 	Moderate:   too sandy 	Moderate:   small stones   too sandy	Moderate:   too sandy 	Severe:   droughty 
Hiwood	7	  Severe:   too sandy	Severe:   too sandy	Severe:   too sandy	Severe:   too sandy	Moderate:   droughty
Meehan	5	  Severe:   wetness   too acid	Severe:   too acid	Severe:   wetness   too acid	Moderate: too sandy wetness	  Severe:   too acid
Faunce	3	  Slight 	  Slight 	  Moderate:   small stones	  Slight 	  Severe:   droughty
1002:  Fluvaquents, frequently flooded	90	    Severe:   flooding   ponding	    Severe:   ponding	  Severe:   flooding   ponding	    Severe:   ponding	Severe:   flooding   ponding
Seelyeville	6	  Severe:   excess humus   ponding	  Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	  Severe:   excess humus   ponding
Hapludalfs	2	  Severe:   slope	Severe:   slope	  Severe:   slope	  Severe:   slope	  Severe:   slope
Water	2	 				
1030:		 				
Pits, gravel	75		i		i	
Udipsamments	20	  Severe:   slope	  Severe:   slope	  Severe:   slope	  Severe:   slope	  Severe:   slope
		too sandy	too sandy	too sandy	too sandy	
Corliss	2	  Moderate:   too sandy 	  Moderate:   too sandy 	Moderate:   slope   small stones	Moderate:   too sandy	  Severe:   droughty
	2	  Slight 	  Slight 	  Slight 	  Slight 	  Moderate:   droughty
Hangaard	1	Severe:   wetness	  Severe:   wetness 	  Severe:   wetness	  Severe:   wetness 	Severe:   wetness   droughty

Table 17.--Recreational Development--Continued

	Percent					1
Map symbol and component name	of map unit	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
1031:		 				
Seelyeville, ponded	90	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
Cathro	4	  Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
Dora	3	  Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
Markey	3   	  Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
1067:				İ	į	į
Fluvaquents, frequently flooded	   60 	  Severe:   flooding   ponding	  Severe:   ponding 	Severe:   flooding   ponding	  Severe:   ponding 	Severe:   flooding   ponding
Hapludalfs	   30 	  Severe:   slope	Severe:	Severe:   slope	Severe:	Severe:
Seelyeville	5	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
Water	   5	 				
1133B:		 				
Skime	85	Slight 	Slight	Moderate:	Slight	Moderate:
Hiwood	10	  Severe:   too sandy	Severe:	Severe:   too sandy	Severe:	Moderate:   droughty
Zippel	5	  Severe:   wetness	Severe:	Severe:   wetness	Severe:   wetness	Severe:   wetness
1134:		 				
Borup	55	Severe:   wetness	Severe:	Severe:   wetness	Severe:   wetness	Severe:   wetness
Glyndon	   35	  Slight 	  Slight	  Slight	Slight	  Slight
Augsburg, depressional-	5	Severe:   percs slowly   ponding	Severe:   percs slowly   ponding	Severe:   percs slowly   ponding	Severe:   ponding	Severe:   ponding
Skime	   5 	  Slight 	  Slight 	  Moderate:   slope	  Slight 	  Moderate:   droughty
1144: Strathcona, depressional	     45	      Severe:	    Severe:		    Severe:	  Severe:
		ponding 	ponding	ponding	ponding	ponding 
Kratka, depressional	45	Severe:   ponding	Severe:   ponding	Severe:   ponding	Severe:   ponding	Severe:   ponding

Table 17.--Recreational Development--Continued

	Percent					
Map symbol and component name	of map unit	Camp areas	Picnic areas	Playgrounds	Paths and   trails	Golf fairways
1144:		 				
Kratka	5	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness
Northwood	5	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
1154:						
Sax	90	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
Wabanica	5	  Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness
Cathro	3	   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
Woodslake	2	Severe:   percs slowly   too clayey   ponding	Severe:   percs slowly   too clayey   ponding	Severe:   percs slowly   too clayey   ponding	Severe:   too clayey   ponding	Severe:   too clayey   ponding
1158:						
Skagen	85	Slight 	Slight	Moderate:   small stones	Slight	Slight
Percy	10	  Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness
Foxhome	5	  Slight 	Slight	Slight	Slight	  Slight 
1170: Skagen, very cobbly	85	  Slight 	  Slight 	Moderate:   small stones	  Slight 	  Slight 
Percy, very cobbly	10	  Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	  Severe:   wetness
Foxhome	5	  Slight 	Slight	Slight	Slight	  Slight
1179B: Moranville	85	Moderate:   percs slowly	  Moderate:   percs slowly	  Moderate:   percs slowly   slope	  Slight 	Moderate:   droughty
Baudette	5	  Slight 	  Slight 	  Moderate:   slope	  Slight 	  Slight 
Hiwood	5	  Severe:   too sandy	  Severe:   too sandy	Severe:   too sandy	Severe:   too sandy	Moderate:
Spooner	5	  Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness
1181:						
Rosewood	50	Severe: wetness	Severe:   wetness	Severe:	Severe:	Severe:   wetness
Ulen	40	  Slight 	  Slight 	  Slight 	  Slight 	  Moderate:   droughty

Table 17.--Recreational Development--Continued

Map symbol and component name	Percent of map unit	   Camp areas 	   Picnic areas 	   Playgrounds 	Paths and trails	   Golf fairways 
				!		[
1181: Redby	5	  Moderate:   too sandy   wetness	  Moderate:   too sandy   wetness	Moderate:   too sandy   wetness	Moderate:   too sandy   wetness	Moderate:   wetness   droughty
Deerwood	3	  Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
Syrene	2	  Severe:   wetness	  Severe:   wetness	Severe:   wetness	  Severe:   wetness	Severe:
1182:		 				
Warroad    	85	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness
Wabanica	7	  Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness
Enstrom	5	  Moderate:   percs slowly	Moderate:   percs slowly	Moderate:   percs slowly	  Slight 	Moderate:   droughty
Sax	3	  Severe:   excess humus   ponding	  Severe:   excess humus   ponding	Severe:   excess humus   ponding	  Severe:   excess humus   ponding	Severe:   excess humus   ponding
 1187:		 				
Dora, ponded	90	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
Seelyeville, ponded	4	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
Wildwood	4	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
Boash	2	  Severe:   wetness	Severe:   wetness	  Severe:   wetness	Severe:   wetness	Severe:   wetness
1191: Sahkahtay	85	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness	Severe:   wetness
   Cormant  	5	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness
  Deerwood    	5	  Severe:   excess humus   ponding	  Severe:   excess humus   ponding	  Severe:   excess humus   ponding	  Severe:   excess humus   ponding	  Severe:   excess humus   ponding
  Karlstad  	3	  Slight 	  Slight 	  Slight 	  Slight 	  Moderate:   droughty
Redby	2	  Moderate:   too sandy   wetness	  Moderate:   too sandy   wetness	  Moderate:   too sandy   wetness	  Moderate:   too sandy   wetness	Moderate: wetness droughty

Table 17.--Recreational Development--Continued

Map symbol and component name	Percent of map unit	   Camp areas 	   Picnic areas 	Playgrounds	Paths and trails	   Golf fairways 		
1206:								
Cormant	   55 	  Severe:   wetness	  Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness		
Redby	35 	  Moderate:   too sandy   wetness	Moderate:   too sandy   wetness	Moderate: too sandy wetness	Moderate:   too sandy   wetness	Moderate:   wetness   droughty		
Hiwood	   5 	  Severe:   too sandy	Severe:   too sandy	Severe:   too sandy	Severe:   too sandy	Moderate:   droughty		
Leafriver	5   5	  Severe:   excess humus   ponding		Severe:   excess humus   ponding		  Severe:   excess humus   ponding		
1214:		 						
Mustinka	90	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness		
Espelie	   4 	  Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness		
Wildwood	   4 	  Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding		
Dalbo	   2 	  Slight 	  Slight 	  Slight	  Slight 	  Slight 		
1274B: Redby	40 	  Moderate:   too sandy   wetness	  Moderate:   too sandy   wetness	Moderate:   too sandy   wetness	Moderate:   too sandy   wetness	  Moderate:   wetness   droughty		
Hiwood	30	  Moderate:   too sandy 	  Moderate:   too sandy 	Moderate:   slope   too sandy	  Moderate:   too sandy	  Moderate:   droughty		
Leafriver, wooded	   15 	  Severe:   excess humus   ponding	  Severe:   excess humus   ponding	Severe:   excess humus   ponding	  Severe:   excess humus   ponding	  Severe:   excess humus   ponding		
Clearriver	5   5	  Moderate:   too sandy 	  Moderate:   too sandy	Moderate:   small stones   too sandy	  Moderate:   too sandy	  Severe:   droughty		
Cormant	   5 	  Severe:   wetness	  Severe:   wetness	Severe:   wetness	  Severe:   wetness	Severe:   wetness		
Zimmerman	   5 	  Severe:   too sandy	  Severe:   too sandy	Severe:   too sandy	  Severe:   too sandy	Moderate:   droughty		
1298:		! 						
Borup	90	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness		
Augsburg, depressional-	3	  Severe:   percs slowly   ponding	  Severe:   percs slowly   ponding	Severe:   percs slowly   ponding	  Severe:   ponding 	  Severe:   ponding 		
Glyndon	   3 	  Slight 	  Slight 	  Slight 	  Slight 	  Slight 		
Sago	2	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding		

Table 17.--Recreational Development--Continued

Map symbol and   component name	Percent of map unit	   Camp areas 	   Picnic areas	Playgrounds	Paths and trails	   Golf fairways
	41111	<u> </u>	1	1		1
1298:		İ	j	İ	İ	j
Skime    	2	Slight   	Slight   	Moderate:   slope	Slight   	Moderate:   droughty
1302:						
Foldahl	85	Slight 	Slight	Slight	Slight	Slight 
Kratka    	10	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness
Foxhome	5	  Slight 	Slight	Slight	Slight	Slight
1304:						
Glyndon	85	Slight	Slight	Slight	Slight	Slight
Borup	10	Severe:	Severe:	Severe:	Severe:	Severe:
		wetness	wetness	wetness	wetness	wetness
Skime	5	Slight	Slight	Moderate:	Slight	Moderate:
		[ [		slope	İ	droughty
1305:					İ	
Hilaire	85	Slight 	Slight 	Moderate:   small stones	Slight 	Moderate:   droughty
Espelie	11	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
		wetness	wetness	wetness	wetness	wetness
Grano	2	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
		wetness	wetness	wetness	wetness	wetness
Redby	2	  Moderate:	  Moderate:	  Moderate:	  Moderate:	Moderate:
		too sandy	too sandy	too sandy	too sandy	wetness
		wetness 	wetness	wetness	wetness	droughty
1314:						!
Tacoosh    	90	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
   Rifle	8	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
İ		excess humus	excess humus	excess humus	excess humus	excess humus
Sax	2	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
İ		excess humus	excess humus	excess humus	excess humus	excess humus
 1316:		 				
Wheatville	85	Moderate:   percs slowly	Moderate:   percs slowly	Moderate:   percs slowly	Slight	Slight
Augsburg	13	  Severe:	  Severe:	  Severe:	  Severe:	Severe:
		percs slowly wetness	percs slowly wetness	percs slowly wetness	wetness	wetness
Grano    	2	  Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness
1326:	4.5		İ	j	İ	
Augsburg, depressional-	45	Severe:   percs slowly	Severe:   percs slowly	Severe:   percs slowly	Severe:   ponding	Severe:   ponding

Table 17.--Recreational Development--Continued

	Percent	 I		1		
Map symbol and component name	of map unit	Camp areas	Picnic areas	Playgrounds	Paths and   trails	Golf fairways
1326:		 				
Wabanica, depressional-	45	  Severe:   ponding	Severe:   ponding	Severe:   ponding	Severe:   ponding	Severe:   ponding
Sax	6	  Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
Espelie	2	  Severe:   wetness	Severe:   wetness	Severe:   wetness	  Severe:   wetness	Severe:   wetness
Zippel	2	  Severe:   wetness	  Severe:   wetness	Severe:   wetness	  Severe:   wetness	Severe:   wetness
1327B:				ì		
Karlstad	65	Slight 	Slight	Slight	Slight 	Moderate: droughty
Marquette	25	  Slight   	  Slight   	Moderate:   slope   small stones	  Slight   	Severe:   droughty
Sahkahtay	7	  Severe:   wetness	  Severe:   wetness	Severe:   wetness	  Severe:   wetness	Severe:   wetness
Redby	3	  Moderate:   too sandy   wetness	  Moderate:   too sandy   wetness	Moderate:   too sandy   wetness	  Moderate:   too sandy   wetness	Moderate:   wetness   droughty
1328:		 				
Northwood, wooded	90	  Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
Berner, wooded	5	  Severe:   excess humus   ponding	  Severe:   excess humus   ponding	Severe:   excess humus   ponding	  Severe:   excess humus   ponding	  Severe:   excess humus   ponding
Grygla	5	  Severe:   wetness	  Severe:   wetness	Severe:   wetness	  Severe:   wetness	Severe:   wetness
1333:		 				
Dora, wooded	90	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
Lupton	4	Severe:   excess humus   wetness	Severe:   excess humus   wetness	Severe:   excess humus   wetness	Severe:   excess humus   wetness	Severe:   excess humus   wetness
Wildwood	4	  Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
Auganaush	2	  Severe:   wetness 	  Severe:   wetness	Severe:   wetness	  Severe:   wetness	Severe:   wetness
1356: Water, miscellaneous.		   	     			

Table 17.--Recreational Development--Continued

	Percent					1
Map symbol and component name	of map unit	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
1399B:						
Two Inlets	85	Moderate: small stones too sandy	Moderate:   small stones   too sandy	Severe:	Moderate:   too sandy	Moderate:   small stones   droughty
Wurtsmith	6	Moderate: too sandy	Moderate:   too sandy	Moderate:   small stones   too sandy	Moderate:   too sandy	Moderate:   droughty
  Zimmerman  	6	Severe: too sandy	  Severe:   too sandy	  Severe:   too sandy		  Moderate:   droughty
Meehan	3	Severe: wetness too acid	Severe:   too acid	Severe:   wetness   too acid	Moderate:   too sandy   wetness	Severe:   too acid
1401:   Grygla, depressional	90	Severe:	  Severe:   ponding	  Severe:   ponding	  Severe:   ponding	Severe:   ponding
Northwood, wooded	5	Severe: excess humus ponding	  Severe:   excess humus   ponding	  Severe:   excess humus   ponding	  Severe:   excess humus   ponding	Severe:   excess humus   ponding
Chilgren	3	Severe: wetness	Severe:   wetness	Severe:   wetness	Severe:	Severe:   wetness
Grygla	2	Severe:		  Severe:   wetness	Severe:   wetness	  Severe:   wetness
1402:     Leafriver, wooded	90	Severe: excess humus ponding	  Severe:   excess humus   ponding	  Severe:   excess humus   ponding	  Severe:   excess humus   ponding	  Severe:   excess humus   ponding
   Cormant  	4	Severe: wetness	Severe:   wetness	  Severe:   wetness	Severe:   wetness	  Severe:   wetness
Tawas	4	Severe: excess humus wetness	Severe:   excess humus   wetness	Severe:   excess humus   wetness	Severe:   excess humus   wetness	Severe:   excess humus   wetness
Redby	2	Moderate: too sandy wetness	Moderate:   too sandy   wetness	Moderate:   too sandy   wetness	Moderate:   too sandy   wetness	Moderate:   wetness   droughty
1404:						
Berner, wooded	90	Severe: excess humus ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
Lupton    	4	Severe: excess humus wetness	Severe:   excess humus   wetness	Severe:   excess humus   wetness	Severe:   excess humus   wetness	Severe:   excess humus   wetness
Northwood, wooded	4	Severe: excess humus ponding	Severe:   excess humus   ponding			Severe:   excess humus   ponding
Grygla  	2	Severe: wetness	Severe:   wetness	Severe:   wetness	  Severe:   wetness	Severe:   wetness

Table 17.--Recreational Development--Continued

Map symbol and	Percent	   Camp areas	   Picnic areas	   Playgrounds	Paths and	   Golf fairways
component name	map unit				trails	
1405:		 				
Lallie	90	  Severe:   excess salt   ponding	Severe:   excess salt   ponding	Severe:   excess salt   ponding	Severe:   ponding	Severe:   excess salt   ponding
Sax	7	  Severe:   excess humus   ponding	  Severe:   excess humus   ponding	  Severe:   excess humus   ponding	  Severe:   excess humus   ponding	  Severe:   excess humus   ponding
Wabanica	3	Severe:   wetness	Severe:	Severe:   wetness	Severe:   wetness	Severe:
1414:		 				
Nereson, very cobbly	85	  Slight 	Slight	Moderate:   small stones	Slight	Slight
Percy, very cobbly	10	  Severe:   wetness	Severe:   wetness	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness
Pelan	3	  Slight 	  Slight	  Moderate:   small stones	  Slight 	  Moderate:   droughty
Foxhome	2	  Slight 	  Slight	  Slight	  Slight 	  Slight 
1428: Karlsruhe	85	  Moderate:   wetness	Moderate:   wetness	Moderate:   small stones   wetness	Moderate:   wetness	  Moderate:   wetness   droughty
Syrene	10	  Severe:   wetness	Severe:   wetness	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness
   Ulen	5	  Slight 	  Slight 	  Slight 	  Slight 	  Moderate:   droughty
1444: Wurtsmith	85	  Moderate:   too sandy 	Moderate:   too sandy	Moderate:   small stones   too sandy	Moderate:   too sandy	Moderate:   droughty
Meehan	10	  Severe:   wetness   too acid	  Severe:   too acid 	Severe:   wetness   too acid	Moderate:   too sandy   wetness	  Severe:   too acid
Clearriver	2	  Moderate:   too sandy 	  Moderate:   too sandy	Moderate:   small stones   too sandy	  Moderate:   too sandy	  Severe:   droughty
Two Inlets	2	  Moderate:   small stones   too sandy	  Moderate:   small stones   too sandy		  Moderate:   too sandy	  Moderate:   small stones   droughty
   Cormant	1	  Severe:   wetness	Severe:   wetness	Severe:	Severe:   wetness	Severe:   wetness
1448:		 	1			
Grano	90	Severe:   too clayey   wetness	Severe:   too clayey   wetness	Severe:   too clayey   wetness	Severe:   too clayey   wetness	Severe:   too clayey   wetness
Percy	5	  Severe:   wetness 	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness

Table 17.--Recreational Development--Continued

	Percent			1	1	
Map symbol and component name	of map unit	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
1448:		 				
Augsburg	3	  Severe:   percs slowly   wetness	Severe:   percs slowly   wetness	Severe:   percs slowly   wetness	Severe:   wetness	Severe:   wetness
Woodslake	2	  Severe:   percs slowly   too clayey   ponding	Severe:   percs slowly   too clayey   ponding	Severe:   percs slowly   too clayey   ponding	Severe:   too clayey   ponding	Severe:   too clayey   ponding
1449:		 			l I	
Grano	90	  Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness
Percy	5	  Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:	Severe:   wetness
Augsburg	3	  Severe:   percs slowly   wetness	Severe:   percs slowly   wetness	Severe:   percs slowly   wetness	Severe:   wetness	Severe:   wetness
Woodslake	2   	  Severe:   percs slowly   too clayey   ponding	Severe:   percs slowly   too clayey   ponding	Severe:   percs slowly   too clayey   ponding	Severe:   too clayey   ponding	Severe:   too clayey   ponding
1807:		 				
Cathro, ponded	90	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe: excess humus ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
Haug	   4 	  Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
Seelyeville, ponded	4	  Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
Percy	   2 	  Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	  Severe:   wetness
1808:		 				
Markey, ponded	90	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
Leafriver	4 	  Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
Seelyeville, ponded	4	  Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding	Severe:   excess humus   ponding
Cormant	   2 	  Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness
1918: Croke	     85	    Slight 	  Slight	  Slight	  Slight 	    Slight 

Table 17.--Recreational Development--Continued

	Percent					
Map symbol and	of	Camp areas	Picnic areas	Playgrounds	Paths and	Golf fairways
component name	map unit	1	1	1	trails	
1918:		 				
Augsburg	13	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
Augaburg	13	percs slowly	percs slowly	percs slowly	wetness	wetness
		wetness	wetness	wetness	WCCIICDD	#6611655
Grano	2	Severe:	Severe:	Severe:	Severe:	Severe:
i		wetness	wetness	wetness	wetness	wetness
		İ	Ì	İ	İ	j
1923B:						
Garnes, very stony	85	Slight	Slight	Moderate:	Slight	Slight
				small stones		
Chilgren	10	Severe:	Severe:	Severe:	Severe:	Severe:
		wetness	wetness	wetness	wetness	wetness
Eckvoll	3	  Moderate:	  Moderate:	  Moderate:	  Moderate:	  Slight
ECKVOII	3	too sandy	too sandy	small stones	too sandy	Slight
		too sandy	too sandy	SMail Scones	too sandy	
Pelan	2	  Slight	Slight	  Moderate:	Slight	Moderate:
1 0 2 4 2 1	_			small stones		droughty
i			i		i	
1984:		İ	i		İ	İ
Leafriver	90	Severe:	Severe:	Severe:	Severe:	Severe:
		excess humus	excess humus	excess humus	excess humus	excess humus
		ponding	ponding	ponding	ponding	ponding
Cormant	5	Severe:	Severe:	Severe:	Severe:	Severe:
		wetness	wetness	wetness	wetness	wetness
Markey	3	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
markey	, <u> </u>	excess humus	excess humus	excess humus	excess humus	excess humus
		ponding	ponding	ponding	ponding	ponding
		ponding	ponding	ponding	ponding	ponding
Redby	2	  Moderate:	Moderate:	Moderate:	Moderate:	Moderate:
		too sandy	too sandy	too sandy	too sandy	wetness
i		wetness	wetness	wetness	wetness	droughty
İ						
W:					1	
Water.						

Table 18.--Wildlife Habitat

(See text for definitions of terms used in this table. Absence of an entry indicates that no rating is applicable.)

				Potenti	al for h	abitat e	lements			Potenti	al as ha	bitat for
Map symbol	Percent	Grain		Wild						Open-	Wood-	Wetland
and	of	and	Grasses	herba-	Hard-	Conif-	Shrubs	Wetland	Shallow	land	land	wild-
component name	map unit	seed	and	ceous	wood	erous		plants	water	wild-	wild-	life
		crops	legumes	plants	trees	plants			areas	life	life	
47:									 			
Colvin	   85	Good	  Good	  Fair	Fair	  Fair	  Fair	  Good	  Good	Good	  Fair	  Good
Bearden	   5	  Good	Good	  Good	Good	Good	  Fair	  Fair	  Fair	  Good	Good	  Fair
Grano	5	Poor	Poor	Fair	  Fair	Fair	  Poor	Poor	Good	Good	  Fair	  Fair
Sax	   5 	  Very   poor	  Poor 	  Poor 	  Poor 	  Poor 	  Poor 	  Good 	  Good 	  Poor 	  Poor 	  Good 
48B:		 		 					 	 	 	
Hiwood	85	Poor	Fair	Poor	Poor	Fair	Fair	Poor	Poor	Fair	Fair	Poor
Redby	   7	  Poor	  Fair	  Good	Fair	Good	  Fair	  Fair	  Poor	  Fair	Good	  Poor
Clearriver	   3 	  Poor	  Good 	  Good 	  Good 	Good	  Fair 	  Fair 	  Very   poor	  Good 	  Good 	  Fair 
Cormant	   3	  Poor	  Fair	  Fair	Fair	Fair	  Fair	  Good	  Good	  Fair	  Fair	  Good
Zimmerman	   2 	  Poor 	  Fair 	  Poor 	  Fair 	  Fair 	  Fair 	  Very   poor	  Very   poor	  Poor 	  Fair 	  Very   poor
52:	 	 		 					 	 		
Augsburg	85	Good	Good	Fair	Fair	Poor	Fair	Fair	Fair	Good	Fair	Fair
Croke	   5	  Good	Good	  Good	Good	Fair	  Fair	Poor	  Fair	  Good	  Fair	  Poor
Grano	   5	  Fair	Poor	  Fair	Fair	Fair	Poor	Poor	  Good	  Good	  Fair	  Fair
Sago	   5 	  Very   poor	  Poor 	  Poor 	Poor	Poor	  Poor 	  Good 	  Good 	  Poor 	  Poor 	  Good 
59:	 	 		 					 	 		 
Grimstad	85	Good	Good	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair
Strathcona	   12	  Good	Good	  Fair	  Fair	  Fair	  Fair	Good	  Good	  Fair	  Fair	  Good
Foxhome	   3 	  Good 	  Good 	  Good 	  Fair 	  Fair 	  Fair 	  Poor 	  Poor 	  Good 	  Fair 	  Poor 

Table 18.--Wildlife Habitat--Continued

				Potenti	al for h	abitat e	lements			Potenti	al as ha	bitat for
Map symbol and	Percent of	Grain	  Grasses	1	1		  Shrubs	  Wetland			Wood-	Wetland   wild-
component name	map unit		and legumes	ceous  plants	wood   trees	erous  plants		plants	water   areas	wild-   life	wild-   life	life
64: Ulen	85	    Good	    Good	    Good	    Fair	    Poor	    Fair	    Poor	    Poor	    Fair	    Fair	    Poor
Rosewood	10	  Good	  Good	  Fair	  Fair	  Fair	  Fair	  Good	  Good	  Fair	  Fair	  Good
Redby	3	  Poor	  Fair	  Good	  Fair	  Good	  Fair	  Fair	  Poor	  Fair	  Good	  Poor
Rushlake	2	  Poor	  Good	  Fair 	  Fair	  Good	  Fair	  Fair	  Poor	  Good	  Good	  Fair 
65: Foxhome	85	    Good	    Good	    Good	    Fair	    Fair	    Fair	    Poor	    Poor	    Good	    Fair	    Poor
Strandquist	12	  Fair 	  Fair	  Fair 	  Fair	Poor	  Fair	  Good	  Good 	  Good	  Fair	  Good
Skagen	3	  Good	Good	  Good 	  Good 	  Fair	  Good 	Poor	  Poor 	  Good 	  Good	  Poor 
67: Bearden	85	    Good	Good	    Good	    Good	  Good	  Fair	  Fair	    Fair	    Good	    Good	  -  Fair
Colvin	15	  Good	Good	  Fair	  Fair	  Fair	  Fair	Good	  Good	  Good	  Fair	  Good
77: Garnes	85	    Good	    Good	    Good	    Good	    Fair	    Good	    Poor	    Poor	    Good	    Good	    Poor
Chilgren	10	  Good	Good	  Fair	Fair	  Fair	Fair	Good	  Fair	  Good	  Good	  Fair
Eckvoll	3	  Fair 	  Fair	  Good	Good	  Good	  Fair	Poor	  Poor	  Fair 	  Good	  Poor
Pelan	2	  Poor	Fair	  Fair 	Fair	Fair	Fair	Poor	  Poor 	  Fair 	  Fair	Poor
111: Hangaard	90	    Poor	  Fair	    Fair	    Fair	  Poor	    Poor	  Good	    Good	    Fair	    Fair	    Good
Deerwood	5	  Very   poor	Very   poor	  Poor 	  Poor 	  Poor 	  Poor 	  Good 	  Good 	  Very   poor	  Poor 	  Good 
Rushlake	3	  Poor	Good	  Fair	  Fair	  Good	  Fair	Fair	  Poor	  Good	  Good	  Fair
Rosewood	2	  Good 	  Good 	  Fair 	  Fair 	  Fair	  Fair 	  Good 	  Good 	  Fair 	  Fair 	  Good 
116: Redby	85	    Poor	    Fair	    Good	    Fair	    Good	    Fair	    Fair	    Poor	    Fair	    Good	    Poor
Cormant	8	  Poor	  Fair	  Fair	  Fair	  Fair	  Fair	Good	  Good	  Fair	  Fair	  Good

Table 18.--Wildlife Habitat--Continued

				Potenti		Potential as habitat for						
Map symbol and	Percent of	Grain and	Grasses	1	   Hard-		Shrubs	  Wetland			Wood-   land	Wetland
component name	map unit	seed crops	and legumes	ceous	wood   trees	erous  plants	<u> </u>	plants	water   areas	wild-   life	wild-	life
116:	     6	 	    Fair	    Poor	    Poor	    Fair	    Fair	    Poor	    Poor	    Fair	    Fair	Poor
H1WOOd	0	Poor	Fair	POOT	POOT	Fair	Fair	POOT	POOT	rair 	Fair	POOT
Leafriver	1	Very   poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
117:		 		 			İ	i i	 	 		1
Cormant	85	Poor	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
Leafriver	7	Very   poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Epoufette	   3	  Fair	Fair	  Fair 	Poor	Poor	Fair	Fair	  Good	  Fair	Poor	Fair
Redby	   3	  Poor	Fair	  Good	Fair	Good	Fair	Fair	  Poor	  Fair	Good	Poor
Grygla, depressional	2	  Poor	Poor	  Poor	Poor	Poor	Poor	Good	  Good	  Poor	Poor	Good
133:	 	 		 					 	 		
Dalbo	85	Good	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
Mustinka	10	Poor	Poor	  Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good
Moranville	5	Fair	Good	Good	Good	Good	Fair	Poor	Poor	Fair	Good	Poor
145:												
Enstrom	85	Fair	Fair	Fair	Fair	Fair	Fair	Poor	Poor	Fair	Good	Poor
Grygla	10	Good	Good	  Fair 	Fair	Fair	Fair	Good	Fair	Fair	Fair	Fair
Redby	4	Poor	Fair	  Good	Fair	Good	Fair	Fair	Poor	Fair	Good	Poor
Pelan	1	Poor	Fair	  Fair	Fair	Fair	Fair	Poor	  Poor	Fair	Fair	Poor
147:												
Spooner	85	Good	Fair	Fair 	Fair	Fair	Fair	Fair	Fair 	Good	Good	Fair
Baudette	5	Good	Good	Good	Good	Good	Good	Very   poor	Very   poor	Good	Good	Very   poor
Grygla	   5	  Good	Good	  Fair	Fair	Fair	Fair	Good	  Fair	  Fair	Fair	Fair
Sago	   5	  Very   poor	Poor	  Poor	Poor	Poor	Poor	  Good	  Good	  Poor	Poor	Good

Table 18.--Wildlife Habitat--Continued

Map symbol	1	Potential for habitat elements										
	Percent	Grain		Wild						Open-	Wood-	Wetland
and	of	and	Grasses	herba-	Hard-	Conif-	Shrubs	Wetland	Shallow	land	land	wild-
component name	map unit	seed	and	ceous	wood	erous		plants	water	wild-	wild-	life
		crops	legumes	plants	trees	plants	1	<u> </u>	areas	life	life	1
158B:	 	 		 					 	 		
Zimmerman	85	Poor	Fair	Poor	Fair	Fair	Fair	Verv	Verv	Poor	Fair	Very
								poor	poor			poor
j					į.	į	į				į	
Hiwood	6 	Poor	Fair	Poor	Poor	Fair	Fair	Poor	Poor	Fair	Fair	Poor
Two Inlets	6	Poor	Fair	Poor	Poor	Fair	Fair	Very	Very	Fair	Fair	Very
İ		į	į	į	į	į	į	poor	poor	į	į	poor
Redby	   3	Poor	Fair	  Good	  Fair	Good	  Fair	Fair	  Poor	  Fair	Good	Poor
neady												
167B:	İ	İ	İ	İ	İ	İ	İ	İ	İ	İ	İ	İ
Baudette	85	Good	Good	Good	Good	Good	Good	Very	Very	Good	Good	Very
	 	  -		 				poor	poor			poor
Spooner	10	Good	Fair	  Fair	Fair	Fair	Fair	Fair	  Fair	Good	Good	Fair
	İ	İ	İ	İ	İ	İ	İ	İ	İ	İ	İ	İ
Moranville	5	Fair	Good	Good	Good	Good	Fair	Poor	Poor	Fair	Good	Poor
187:	 	 		 					 	 		
Haug	90	Very	Very	Poor	Poor	Poor	Poor	Good	Good	Very	Poor	Good
i		poor	poor		İ	İ	İ			poor	İ	į
Percy	   5	Good	Good	  Fair	Fair	Fair	Fair	Good	  Good	  Good	  Fair	Fair
Percy	3	G00a 	Good	Fair 	Fall	Fair	Fall	Good	G00a 	G000	Fall	raii
Cathro	3	Poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Boash	   2	  Fair	Fair	  Fair	Fair	Poor	Poor	Poor	  Fair	  Fair	  Fair	  Fair
Boasn	<b>4</b> 	rair 	rair	rair 	Fair	POOT	POOT	POOT	rair 	rair 	rair	Fair
191:		İ	į	İ	i	i	i	į	İ	İ	İ	į
Epoufette	85	Fair	Fair	Fair	Poor	Poor	Fair	Fair	Good	Fair	Poor	Fair
Cormant	   5	Poor	Fair	  Fair	Fair	Fair	  Fair	Good	  Good	  Fair	  Fair	Good
Leafriver	5	Very	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
	 	poor		 					 			
Meehan	   5	Poor	Fair	  Good	Fair	Fair	Fair	Fair	  Poor	  Fair	Fair	Poor
	ļ	ļ	ļ	ļ	ļ	ļ	ļ	ļ	ļ	ļ	!	
202: Meehan	   85	Poor	Fair	Good	  Fair	  Fair	  Fair	Fair	  Poor	  Fair	  Fair	Poor
meenail	65		Larr	<del>G</del> OOG 	  rair	Lair	  rair	Larr		Lair	Lair	
Cormant	8	Poor	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good

Table 18.--Wildlife Habitat--Continued

Percent of map unit		Grasses and legumes           Fair      Poor	ceous	Hard- wood trees	Conif-   erous  plants   Good   Poor	Shrubs	Wetland   plants	water areas Very poor	wild-   life      Fair	Wood-   land   wild-   life      Good	Wetland wild- life
map unit	seed   crops	and legumes	ceous	wood trees          Fair	erous plants  Good	          Fair 	plants        Poor 	water areas Very poor	wild-   life      Fair	wild-   life 	life
5 2 85	crops	legumes      Fair    Poor	plants        Fair	trees	plants      Good 		      Poor 	areas Very poor	life      Fair	life	 
2	  Poor      Very   poor	    Fair      Poor	    Fair 	    Fair 	    Good 			Very poor	  Fair		      Poor 
2	  Very   poor	    Poor   						poor		    Good 	    Poor 
2	  Very   poor	    Poor   						poor		  Good 	  Poor   
2	  Very   poor	    Poor   						poor		   	
85   	poor	 	  Poor   	  Poor 	Poor	Poor	Cood				
85   	poor	 			POOL				Poor	Poor	Good
	    Poor 	    Fair	 					Good			6000
	Poor	Fair						 	 		
   7	ĺ		Fair	Fair	Fair	Fair	Poor	Very	Poor	Fair	Very
7	i	İ	İ	İ	į	į	İ	poor			poor
	  Fair	Fair	  Fair	Fair	Fair	Fair	Fair	Good	Fair	  Fair	  Fair
5	Poor	Fair	Fair	Poor	Fair	Poor	Very		Poor	Poor	Very
	 						poor	poor			poor
2	Poor	Fair	Good	Fair	Good	Fair	Fair	Poor	Fair	Good	Poor
1									 		
	 	 	 			1	 	 	 		 
85	Poor	Fair	Fair	Poor	Fair	Poor	Very	Very	Poor	Poor	Very
į	į	į	į	į	į	į	poor	poor		į	poor
14	Poor	  Fair	  Fair	Fair	  Fair	Fair	Poor	  Verv	Poor	  Fair	  Very
								poor			poor
1	 		 						 		 
85	Poor	Fair	Fair	Fair	Fair	Fair	Poor	Poor	Fair	Fair	Poor
10	  Fair	  Fair	  Fair	Fair	Poor	Fair	  Good	Good	Good	  Fair	  Good
2	Cood	Cood	Cood	Cood	Foin	Cood	   Doom	l Doom	Cood	Cood	  Poor
ا ا	G000	G00a		6000	Lair	6000		1.001	<del>G</del> OOQ 		
1	Poor	Fair	Fair	Poor	Fair	Poor	Very	Very	Poor	Poor	Very
Ì							poor	poor			poor
1	 		 					 			 
	5 2 1 85 14 1 85 10 3	5   Poor	5   Poor   Fair	5   Poor   Fair   Fair   2   Poor   Fair   Good   1       85   Poor   Fair   Fair   14   Poor   Fair   Fair   15   Poor   Fair   Fair   16   Fair   Fair   17   Good   Good   16   Poor   Fair   Fair   17   Fair   Fair   18   Fair   Fair   19   Fair   Fair   10   Fair   Fair   10   Fair   Fair   11   Poor   Fair   Fair   12   Fair   Fair   13   Good   Good   Good   14   Poor   Fair   Fair   15   Fair   Fair   16   Fair   Fair   17   Fair   Fair	5   Poor   Fair   Fair   Poor   2   Poor   Fair   Good   Fair   1         85   Poor   Fair   Fair   Poor   14   Poor   Fair   Fair   Fair   1         85   Poor   Fair   Fair   Fair   10   Fair   Fair   Fair   Fair   3   Good   Good   Good   Good   1   Poor   Fair   Fair   Poor	5   Poor   Fair   Fair   Poor   Fair   2   Poor   Fair   Good   Fair   Good   1           85   Poor   Fair   Fair   Poor   Fair   14   Poor   Fair   Fair   Fair   Fair   1           85   Poor   Fair   Fair   Fair   Fair   10   Fair   Fair   Fair   Fair   Poor   3   Good   Good   Good   Good   Fair   1   Poor   Fair   Fair   Poor   Fair	5   Poor   Fair   Fair   Poor   Fair   Poor   2   Poor   Fair   Good   Fair   Good   Fair   1           85   Poor   Fair   Fair   Poor   Fair   Poor   14   Poor   Fair   Fair   Fair   Fair   Fair   1             85   Poor   Fair   Fair   Fair   Fair   Fair   10   Fair   Fair   Fair   Fair   Poor   Fair   3   Good   Good   Good   Good   Fair   Good   1   Poor   Fair   Fair   Poor   Fair   Poor	5   Poor   Fair   Fair   Poor   Fair   Poor   Very   poor   2   Poor   Fair   Good   Fair   Good   Fair   Fair   1             85   Poor   Fair   Fair   Poor   Fair   Poor   Very   poor   14   Poor   Fair   Fair   Fair   Fair   Fair   Poor   1               85   Poor   Fair   Fair   Fair   Fair   Fair   Poor   10   Fair   Fair   Fair   Fair   Poor   Fair   Good   3   Good   Good   Good   Good   Fair   Good   Poor   1   Poor   Fair   Fair   Poor   Fair   Poor   Very   poor	5   Poor   Fair   Fair   Poor   Fair   Poor   Very   Very   poor   poor   2   Poor   Fair   Good   Fair   Good   Fair   Fair   Poor   1               85   Poor   Fair   Fair   Poor   Fair   Poor   Very   Very   poor   14   Poor   Fair   Fair   Fair   Fair   Fair   Poor   Very   poor   1                 85   Poor   Fair   Fair   Fair   Fair   Fair   Poor   Poor   10   Fair   Fair   Fair   Fair   Fair   Good   Good   3   Good   Good   Good   Good   Good   Fair   Good   Poor   Poor   1   Poor   Fair   Fair   Poor   Fair   Poor   Very   Very   poor   poor	5   Poor   Fair   Fair   Poor   Fair   Poor   Very   Very   Poor   2   Poor   Fair   Good   Fair   Good   Fair   Fair   Poor   Fair   1             85   Poor   Fair   Fair   Poor   Fair   Poor   Very   Very   Poor   14   Poor   Fair   Fair   Fair   Fair   Fair   Fair   Poor   Very   Poor   15   Poor   Fair   Fair   Fair   Fair   Fair   Poor   Very   Poor   16   Fair   Fair   Fair   Fair   Fair   Fair   Poor   Poor   Fair   17   Fair   Fair   Fair   Fair   Fair   Good   Good   Good   18   Poor   Fair   Fair   Fair   Poor   Fair   Good   Good   19   Poor   Fair   Fair   Poor   Fair   Poor   Poor   Poor   Poor   10   Poor   Fair   Fair   Fair   Poor   Fair   Good   Good   Good   10   Poor   Fair   Fair   Poor   Fair   Poor   Poor   Poor   Good   11   Poor   Fair   Fair   Poor   Fair   Poor   Very   Very   Poor   12   Poor   Poor   Poor   Poor   Poor   Poor   Poor   13   Poor   Poor   Poor   Poor   Poor   Poor   Poor   14   Poor   Poor   Poor   Poor   Poor   Poor   Poor   15   Poor   Poor   Poor   Poor   Poor   Poor   Poor   16   Poor   Poor   Poor   Poor   Poor   Poor   Poor	5   Poor   Fair   Fair   Poor   Fair   Poor   Very   Very   Poor   Poor   2   Poor   Fair   Good   Fair   Good   Fair   Fair   Poor   Fair   Good   1                   85   Poor   Fair   Fair   Foor   Fair   Poor   Very   Very   Poor   Poor   14   Poor   Fair   Fair   Fair   Fair   Fair   Poor   Very   Poor   Fair   1                 85   Poor   Fair   Fair   Fair   Fair   Fair   Poor   Poor   Fair   10   Fair   Fair   Fair   Fair   Poor   Fair   Good   Good   Good   Good   3   Good   Good   Good   Good   Good   Fair   Good   Poor   Poor   Good   Good   4   Poor   Fair   Fair   Fair   Poor   Fair   Poor   Poor   Poor   Poor   5   Poor   Fair   Fair   Fair   Poor   Fair   Good   Good   Good   Good   6   Poor   Fair   Fair   Fair   Poor   Fair   Poor   Poor   Poor   Poor   7   Poor   Fair   Fair   Fair   Poor   Poor   Poor   Poor   Poor   8   Poor   Fair   Fair   Fair   Poor   Poor   Poor   Poor   Poor

poor

Good

Fair

Fair

Fair

			Table 1	L8Wild	dlife Hal	oitatCo	ontinued					
				Potenti	al for h	abitat e	lements			Potenti	al as ha	bitat for
Map symbol	Percent	Grain		Wild						Open-	Wood-	Wetland
and	of	and	Grasses	herba-	Hard-	Conif-	Shrubs	Wetland	Shallow	land	land	wild-
component name	map unit	seed	and	ceous	wood	erous		plants	water	wild-	wild-	life
		crops	legumes	plants	trees	plants	<u> </u>	<u> </u>	areas	life	life	
379:	 								  -	 		 
Percy, very cobbly	90	Good	Good	  Fair	Fair	Fair	Fair	Good	  Good	  Good	  Fair	  Fair
1010// 101/ 10221/												
Boash	3	Fair	Fair	Fair	Fair	Poor	Poor	Poor	Fair	Fair	Fair	Fair
	İ	į	į	į	į	į	į	į	İ	j	į	Ì
Strandquist	3	Fair	Fair	Fair	Fair	Poor	Fair	Good	Good	Good	Fair	Good
												[
Haug	2	Very	Very	Poor	Poor	Poor	Poor	Good	Good	Very	Poor	Good
		poor	poor							poor		
Skagen, very cobbly	   2	  Good	Good	  Good	Good	  Fair	Good	Poor	  Poor	  Good	  Good	  Poor
Skagen, very Cobbly	<b>2</b> 	Good	GOOG	GOOG	Good	raii	Good	POOL	1001	Good	G00a 	1001
383:	 	 							 	! 	 	i
Percy	90	Good	Good	Fair	Fair	Fair	Fair	Good	Good	Good	Fair	Fair
-	İ	i	i	İ	İ	İ	İ	İ		İ	İ	İ
Boash	3	Fair	Fair	Fair	Fair	Poor	Poor	Poor	Fair	Fair	Fair	Fair
												[
Strandquist	3	Fair	Fair	Fair	Fair	Poor	Fair	Good	Good	Good	Fair	Good
**	   2		 		   D = ===		   D			 		
Haug	4	Very	Very	Poor	Poor	Poor	Poor	Good	Good	Very	Poor	Good
	 	poor	poor	 	1	1	1	l l	 	poor	 	
Skagen	   2	Good	Good	Good	Good	Fair	Good	Poor	Poor	Good	Good	Poor
3	İ				İ		Ì					İ
384:	İ	į	į	į	į	İ	į	į	İ	j	į	Ì
Percy, depressional	85	Poor	Poor	Fair	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
												[
Haug	7	Very	Very	Poor	Poor	Poor	Poor	Good	Good	Very	Poor	Good
		poor	poor							poor		
Danier.	   5	Good	Good	  Fair	Fair	  Fair	  Fair	Good	  Good	Good	  Fair	  Fair
Percy	<b>5</b>	Good	Good	Fall	rair	Fall	raii	Good	GOOG	Good	raii	raii 
Boash	   3	Fair	Fair	Fair	Fair	Poor	Poor	Poor	Fair	Fair	Fair	Fair
<del>-</del>	<u> </u>											
387:	İ	i	İ	į	İ	İ	İ	į	İ	İ	į	i
Roliss, depressional	85	Poor	Poor	Fair	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
												[
Haug	10	Very	Very	Poor	Poor	Poor	Poor	Good	Good	Very	Poor	Good

|Fair |Fair |Fair

Fair Good

poor

Good

Roliss----- 5

poor

Good

Table 18.--Wildlife Habitat--Continued

				Potenti		Potenti	al as ha	bitat for-				
Map symbol	Percent	Grain		Wild						Open-	Wood-	Wetland
and	of	and	Grasses	herba-	Hard-		Shrubs	Wetland	Shallow	land	land	wild-
component name	map unit	seed	and	ceous	wood	erous		plants	water	wild-	wild-	life
		crops	legumes	plants	trees	plants	<u> </u>	<u> </u>	areas	life	life	
404:		 	 	 	l I		1	1	 	 	l I	
Chilgren	85	Good	Good	Fair	Fair	Fair	Fair	Good	Fair	Good	Good	Fair
	5	  Good	  Good	  Good	Good	  Fair	Good	Poor	  Poor	  Good	  Good	  Poor
Grygla	5	  Good	  Good	  Fair 	Fair	  Fair	Fair	Good	  Fair	  Fair	  Fair	  Fair
Haug	5	  Very   poor	Very   poor	  Poor 	Poor	Poor	Poor	Good	  Good 	  Very   poor	Poor	  Good 
412:		 							 			
Mavie	85	Fair	Fair	Fair	Fair	Poor	Fair	Good	Good	Fair	Fair	Good
Foxhome	5	Good	Good	  Good	Fair	Fair	Fair	Poor	  Poor	  Good	Fair	Poor
Northwood	5	  Very   poor	Very   poor	  Poor 	Poor	Poor	Poor	Good	  Good 	  Very   poor	Poor	Good
Percy, very cobbly	5	Good	Good	  Fair	Fair	Fair	Fair	Good	  Good	  Good	Fair	  Fair
432:				 	1			1	 	[		
Strandquist	85	Fair	Fair	Fair	Fair	Poor	Fair	Good	Good	Good	Fair	Good
Percy, very cobbly	5	Good	Good	  Fair	Fair	Fair	Fair	Good	  Good	  Good	Fair	  Fair
Haug	4	  Very   poor	Very   poor	  Poor 	Poor	Poor	Poor	Good	  Good	  Very   poor	Poor	  Good 
   Boash	3	  Fair	  Fair	  Fair	Fair	Poor	Poor	Poor	  Fair	  Fair	Fair	  Fair
Foxhome	3	Good	Good	  Good	Fair	Fair	Fair	Poor	  Poor	  Good	Fair	Poor
433:				 					 	 		 
Syrene, depressional	85	Poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Deerwood	5	Very   poor	Very   poor	  Poor 	Poor	Poor	Poor	Good	  Good 	Very  poor	Poor	Good
Rosewood	5	Good	Good	  Fair	Fair	  Fair	Fair	Good	  Good	  Fair	  Fair	  Good
Syrene	5	Fair	Fair	  Fair	Fair	Poor	Fair	Good	  Good	  Fair	Fair	Good

				Potenti	al for h	abitat e	lements			Potenti	al as ha	bitat for
Map symbol	Percent	Grain		Wild						Open-	Wood-	Wetland
and	of	and	Grasses	herba-	Hard-	Conif-	Shrubs	Wetland	Shallow	land	land	wild-
component name	map unit	seed	and	ceous	wood	erous		plants	water	wild-	wild-	life
		crops	legumes	plants	trees	plants	<u> </u>		areas	life	life	<u> </u>
435:									_			_
Syrene	85	Fair	Fair	Fair	Fair	Poor	Fair	Good	Good	Fair	Fair	Good
Rosewood	5	  Good	Good	  Fair	Fair	Fair	Fair	  Good	  Good	  Fair	Fair	Good
Syrene, depressional	5	  Poor	Poor	Poor	Poor	Poor	Poor	  Good	  Good 	  Poor	Poor	  Good
Karlsruhe	3	  Fair 	Good	  Good	Fair	  Fair	Fair	  Fair 	  Poor 	  Good	Fair	Poor
Deerwood	2	  Very   poor	  Very   poor	  Poor 	Poor	  Poor 	Poor	  Good 	  Good 	  Very   poor	Poor	  Good 
439:		l I	 		 	 	 	 	 	l I	 	1
Strathcona	85	Good	Good	  Fair	Fair	Fair	Fair	Good	  Good 	  Fair	Fair	  Good
Northwood	5	Very   poor	Very   poor	Poor	Poor	Poor	Poor	Good	Good	Very   poor	Poor	Good
Percy	5	  Good	  Good	  Fair	  Fair	  Fair	Fair	  Good	  Good	  Good	  Fair	  Fair
Grimstad	3	  Good	  Good	  Fair	  Fair	  Fair	Fair	  Fair	  Fair	  Fair 	  Fair	  Fair
Strandquist	2	  Fair 	  Fair	  Fair 	  Fair	  Poor	Fair	  Good 	  Good 	  Good 	  Fair	  Good
481:		 	l		İ		Ì		 	 	i i	
Kratka	85	Good	Good	Fair	Fair	Poor	Fair	Good	  Fair	Fair	Fair	  Fair
Northwood	5	Very   poor	Very   poor	Poor	Poor	Poor	Poor	Good	  Good 	Very   poor	Poor	Good
Percy	5	  Good	  Good	  Fair 	  Fair	  Fair 	  Fair	  Good 	  Good 	  Good	  Fair	  Fair
Enstrom	3	  Fair 	  Fair	  Fair	Fair	  Fair	Fair	  Poor	  Poor	  Fair 	Good	Poor
Strandquist	2	  Fair 	  Fair	  Fair	Fair	Poor	Fair	  Good 	  Good 	  Good 	Fair	  Good 
482:		i	i		<u> </u>	i		<u> </u>	<u> </u>	i		i
Grygla	85	Good	Good	Fair	Fair	Fair	Fair	Good	  Fair	Fair	Fair	Fair
Chilgren	5	  Good 	Good	  Fair 	Fair	  Fair	Fair	  Good 	  Fair 	  Good	Good	  Fair
Grygla, depressional	5	Poor	Poor	Poor	Poor	Poor	Poor	Good	  Good	Poor	Poor	Good

Table 18.--Wildlife Habitat--Continued

Table 18.--Wildlife Habitat--Continued

		I		Potenti	al for h	abitat e	lements			Potenti	al as ha	bitat for
Map symbol and component name	Percent   of   map unit	Grain and seed crops	  Grasses   and  legumes	ceous	Hard-   wood   trees	Conif-   erous   plants	  Shrubs 	  Wetland  plants	  Shallow   water   areas	Open-   land   wild-   life	Wood-   land   wild-   life	Wetland   wild-   life
482:		 		 	ļ					ļ		
Enstrom	3 	Fair	Fair	Fair	Fair	Fair	Fair	Poor	Poor	Fair	Good	Poor
Northwood	   2 	Very  poor	Very   poor	  Poor 	Poor	Poor	Poor	Good	Good	  Very   poor	Poor	Good
532:	! 	 		 								
Sago	90	Very   poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Cathro	   5 	  Poor 	  Poor	  Poor 	  Poor	  Poor	  Poor	  Good 	  Good 	  Poor 	  Poor	Good
Zippel	5   5	Good	Good	  Fair 	Fair	  Fair 	Fair	Good	Good	  Good 	Fair	Good
534:	!	!	[	!			1	1		!		İ
Mooselake	90   	Very   poor	Poor	Poor   	Poor	Poor	Poor	Good 	Good 	Poor 	Poor	Good 
Bullwinkle	   <b>4</b> 	Very  poor	Poor	  Poor 	Poor	Poor	Poor	Good	Good	Poor	Fair	Good
Dora	   3 	  Very   poor	Very   poor	  Very   poor	Poor	Poor	Poor	Good	  Good 	  Very   poor	Poor	Good
Tawas	   3 	  Very   poor	Poor	  Poor 	Poor	Poor	Poor	Good	  Good 	  Fair 	  Poor	  Good 
540:	 	 		 					 	 		
Seelyeville	90	Very   poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Cathro	   <b>4</b> 	  Poor 	Poor	  Poor 	Poor	  Poor	Poor	  Good 	  Good 	  Poor 	Poor	Good
Dora	   3 	Very   poor	Very   poor	  Very   poor	Poor	Poor	Poor	Good	Good	Very   poor	Poor	Good
Markey	   3 	  Very   poor	Very   poor	  Poor 	Poor	Poor	Poor	Good	  Good 	  Poor 	Poor	Good
541:		! !		 	ļ	-			<u> </u>	ļ		
Rifle	90	Poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Tacoosh	   10 	  Poor 	  Poor 	  Poor 	  Poor 	  Poor 	  Poor 	  Good 	  Good 	  Poor 	  Poor 	Good

				Potenti	al for h	abitat e	lements			Potential as habitat for-			
Map symbol	Percent	Grain	Ī	Wild		Ī	Ī	Ī	I	Open-	Wood-	Wetland	
and	of	and	Grasses	herba-	Hard-	Conif-	Shrubs	Wetland	Shallow	land	land	wild-	
component name	map unit	seed	and	ceous	wood	erous	İ	plants	water	wild-	wild-	life	
		crops	legumes	plants	trees	plants	<u> </u>	<u> </u>	areas	life	life	<u>i</u>	
543:													
Markey	90	Very	Very	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good	
markey	90	very   poor	poor	POOT   	POOT	Poor		   	G00a 	<b>POOT</b>   	POOT	Good	
Cormant	5	  Poor 	Fair	  Fair 	Fair	  Fair	Fair	  Good 	  Good 	  Fair 	Fair	Good	
Seelyeville	5	Very   poor	Poor	Poor	Poor	Poor	Poor	Good	  Good 	  Poor 	Poor	Good	
544:										İ			
Cathro	90	Poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good	
Percy, very cobbly	4	  Good	Good	  Fair	Fair	Fair	Fair	Good	  Good	  Good	Fair	Fair	
Grygla	3	  Good	Good	  Fair	Fair	Fair	Fair	Good	  Fair	  Fair	Fair	Fair	
Seelyeville	3	  Very   poor	Poor	  Poor 	Poor	Poor	Poor	Good	  Good 	  Poor 	Poor	Good	
546:		 		 					 	 			
Lupton	90	Very   poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good	
Bullwinkle	4	  Very   poor	Poor	  Poor 	Poor	Poor	Poor	Good	  Good 	  Poor 	  Fair 	Good	
Dora	3	  Very   poor	  Very   poor	  Very   poor	  Poor 	Poor	Poor	  Good	  Good 	  Very   poor	  Poor 	  Good 	
Tawas	3	  Very   poor	  Poor	  Poor 	  Poor 	  Poor	  Poor	  Good	  Good 	  Fair 	  Poor 	  Good 	
547:		 		 					 	 			
Deerwood	90	Very   poor	Very   poor	Poor	Poor	Poor	Poor	Good	Good	Very   poor	Poor	Good	
Markey	4	  Very   poor	  Very   poor	  Poor 	  Poor 	  Poor	  Poor	  Good	  Good 	  Poor 	  Poor 	  Good 	
Rosewood	3	Good	Good	  Fair	Fair	Fair	Fair	Good	  Good	  Fair	Fair	Good	
Syrene	3	  Fair	  Fair	  Fair	Fair	Poor	Fair	  Good	  Good	  Fair	Fair	Good	

Table 18.--Wildlife Habitat--Continued

Table 18.--Wildlife Habitat--Continued

		ļ			al for n	abitat e	lements			<u>.                                      </u>		bitat for-
Map symbol and component name	Percent of map unit	Grain and seed crops	  Grasses   and  legumes	ceous	Hard- wood trees	Conif-   erous  plants	  Shrubs   	  Wetland  plants 	  Shallow   water   areas	Open-   land   wild-   life	Wood-   land   wild-   life	Wetland   wild-   life
					1	[		[			!	
550: Dora	90	  Very   poor	  Very   poor	  Very   poor	Poor	  Poor	  Poor 	  Good 	  Good 	  Very   poor	  Poor	Good
Boash	4	  Fair	Fair	  Fair	Fair	Poor	Poor	Poor	  Fair	  Fair	  Fair	Fair
Seelyeville	3	  Very   poor	Poor	  Poor 	Poor	  Poor	  Poor 	  Good	  Good 	  Poor 	  Poor	Good
Woodslake	3	  Poor	Poor	  Poor	Poor	Poor	Poor	Good	  Good	  Poor	Poor	Good
561: Bullwinkle	90	    Very	    Poor	    Poor	    Poor	    Poor	    Poor	    Good	    Good	    Poor	    Fair	Good
		poor	İ	İ	İ	į	İ	į	İ	İ	j	İ
Lupton	4	  Very   poor	  Poor	  Poor 	  Poor 	  Poor 	  Poor 	  Good 	  Good 	  Poor 	  Poor 	  Good 
Northwood, wooded	4	  Very   poor	  Very   poor	  Poor 	  Poor 	  Poor 	  Poor 	  Good 	  Good 	  Very   poor	  Poor 	  Good 
Chilgren	2	  Good	Good	  Fair	Fair	Fair	Fair	Good	  Fair	  Good	Good	Fair
563:		 	 	 	1				 	 		1
Northwood	90	Very   poor	Very   poor	Poor	Poor	Poor	Poor	Good	Good	Very   poor	Poor	Good
Grygla	4	  Good	Good	  Fair	Fair	  Fair	Fair	  Good	  Fair	  Fair	  Fair	  Fair
Berner	3	  Poor	Poor	  Poor	Poor	Poor	Poor	  Good	  Good 	  Good 	Poor	  Good
Strandquist	3	  Fair	  Fair	  Fair 	Fair	Poor	Fair	Good	  Good	  Good	Fair	Good
565: Eckvoll	85	    Fair	Fair	    Good	Good	Good	  Fair	Poor	    Poor	    Fair	Good	Poor
Chilgren	5	  Good	Good	  Fair	Fair	Fair	Fair	Good	  Fair	  Good	Good	Fair
Grygla	5	  Good	Good	  Fair	Fair	Fair	Fair	Good	  Fair	  Fair	  Fair	Fair
Hiwood	5	Poor	  Fair	  Poor	Poor	Fair	Fair	Poor	  Poor	  Fair	Fair	Poor

Table 18.--Wildlife Habitat--Continued

J				Potenti	al for h	abitat e	lements			Potenti	al as ha	bitat for-
Map symbol and	Percent of	Grain   and	Grasses	1		  Conif-	Shrubs	  Wetland	'		Wood-   land	Wetland   wild-
component name	map unit		and legumes	ceous	wood   trees	erous  plants		plants	water   areas	wild-   life	wild-   life	life
568:	 	 		 					 	 		
Zippel	85	Good	Good	Fair	Fair	Fair	Fair	Good	Good	Good	Fair	Good
Augsburg, depressional	   5	  Poor	Poor	  Poor	Poor	Poor	Poor	Good	  Good 	  Poor	Poor	Good
Sago	   5 	  Very   poor	Poor	  Poor 	Poor	Poor	Poor	Good	  Good 	  Poor 	Poor	Good
  Skime  	   5 	  Poor 	  Fair 	  Fair 	  Fair 	  Fair 	  Fair 	  Poor	  Poor 	  Fair 	  Fair 	Poor
569:												
Wabanica	85 	Good	Good	Fair 	Fair	Fair	Fair	Good	Fair 	Fair	Fair	Fair
Warroad	6	Good	Good	Good	Fair	Fair	Fair	Good	Fair	Fair	Fair	Fair
Sax	4	Very   poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Grano	   3	  Fair	Poor	  Fair 	Fair	Fair	Poor	Poor	  Good 	  Good	  Fair	Fair
Enstrom	   2	  Fair	Fair	  Fair 	Fair	Fair	Fair	Poor	  Poor	  Fair	Good	Poor
570:				 					 	 		
Faunce	85	Poor	Fair	Fair	Fair	Fair	Fair	Poor	Poor	Fair	Fair	Poor
Clearriver	7	  Poor 	Good	  Good 	Good	  Good 	  Fair 	  Fair	  Very   poor	  Good	Good	Fair
Zimmerman	   <b>4</b> 	  Poor 	  Fair 	  Poor 	  Fair 	  Fair 	  Fair 	  Very   poor	  Very   poor	  Poor 	  Fair 	Very   poor
Meehan	3	  Poor	Fair	  Good	Fair	Fair	Fair	Fair	  Poor	  Fair	Fair	Poor
Pits, gravel	1	 		 					 	 		
581:									 			
Percy	90	Good	Good	Fair	Fair	Fair	Fair	Good	Good	Good	Fair	Fair
Haug	   5 	  Very   poor	Very   poor	  Poor 	Poor	  Poor 	Poor	Good	  Good	  Very   poor	Poor	Good
Boash	3	  Fair	Fair	  Fair	Fair	Poor	Poor	Poor	  Fair	  Fair	Fair	Fair
Skagen	2	  Good	Good	Good	Good	Fair	Good	Poor	Poor	  Good	Good	Poor

Table 18.--Wildlife Habitat--Continued

		!			al for h	abitat e	lements			<u>.                                      </u>		bitat for-
Map symbol and	Percent of	Grain and	Grasses	Wild  herba-	   Hard-	  Conif-	Shrubs	  Wetland	  Shallow	Open-	Wood-   land	Wetland   wild-
component name	map unit	seed crops	and legumes	ceous plants	wood   trees	erous  plants	<u> </u>	plants	water   areas	wild-   life	wild-	life
582 <b>:</b>		 		 	1				 			
Roliss	85	Good	Good	Fair	Fair	Fair	Fair	Good	Fair	Good	Fair	Fair
Roliss, depressional	7	  Poor	Poor	  Fair	Poor	Poor	Poor	Good	  Good	  Poor	Poor	Good
Boash	5	  Fair 	  Fair	  Fair 	Fair	Poor	Poor	Poor	  Fair 	  Fair 	Fair	  Fair
Haug	3	  Very   poor	Very   poor	  Poor 	Poor	Poor	Poor	Good	  Good 	  Very   poor	Poor	Good
583:		 		 					 	 		
Nereson	85	Good	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
Percy	10	  Good	Good	  Fair	Fair	Fair	Fair	Good	  Good	  Good	Fair	  Fair
Pelan	3	  Poor	Fair	  Fair	Fair	Fair	Fair	Poor	  Poor	  Fair	Fair	Poor
Foxhome	2	  Good	Good	  Good	Fair	Fair	Fair	Poor	  Poor	  Good	Fair	Poor
627:		 	1	 	1		1		 	[ [		
Tawas	90	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Fair	Poor	Good
Leafriver	4	  Very   poor	  Poor 	  Poor 	Poor	Poor	Poor	Good	  Good 	  Poor 	  Poor	Good
Lupton	4	  Very   poor	  Poor 	  Poor 	  Poor 	  Poor 	  Poor 	  Good 	  Good 	  Poor 	  Poor 	  Good 
Cormant	2	  Poor	  Fair	  Fair	Fair	Fair	Fair	Good	  Good	  Fair	Fair	Good
630:		 	1	 	l I		İ		 	 		
Wildwood	90	Very   poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Boash	4	  Fair	  Fair	  Fair	Fair	Poor	Poor	Poor	  Fair	  Fair	  Fair	  Fair
Dora	4	  Very   poor	Very   poor	  Very   poor	Poor	Poor	Poor	  Good	  Good 	  Very   poor	Poor	  Good 
Espelie	2	Good	Good	  Fair	Fair	  Fair	Fair	Good	  Good	  Fair	  Fair	Good

				Potenti	al for h	abitat e	lements			Potenti	al as ha	bitat for
Map symbol	Percent	Grain	Ī	Wild		Ī		I		Open-	Wood-	Wetland
and	of	and	Grasses	herba-	Hard-	Conif-	Shrubs	Wetland	Shallow	land	land	wild-
component name	map unit	seed	and	ceous	wood	erous		plants	water	wild-	wild-	life
		crops	legumes	plants	trees	plants	İ.	İ	areas	life	life	İ.
643:		 							 			
Huot	85	Good	Good	Fair	Fair	Fair	Fair	Poor	Poor	Good	Fair	Fair
Thiefriver	12	Good	Good	  Fair	Fair	Fair	Fair	Fair	  Fair	  Fair	Fair	  Fair
Redby	3	  Poor	Fair	  Good	Fair	Good	Fair	Fair	  Poor	  Fair	Good	Poor
644:		 		 					 	 		
Boash	85	Fair	Fair	Fair	Fair	Poor	Poor	Poor	Fair	Fair	Fair	Fair
Percy	7	  Good	Good	  Fair	Fair	Fair	Fair	Good	  Good	  Good	Fair	  Fair
Woodslake	5	  Poor	Poor	  Poor	Poor	Poor	Poor	  Good	  Good 	  Poor	Poor	Good
Strandquist	3	  Fair 	Fair	  Fair 	Fair	Poor	Fair	Good	  Good 	  Good 	Fair	Good
645:		İ			İ	İ	İ	İ		İ	İ	
Espelie	85	Good	Good	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
Grano	5	Fair	Poor	Fair	Fair	Fair	Poor	Poor	Good	Good	Fair	Fair
Hilaire	5	Good	Good	Good	Fair	Fair	Fair	Poor	Poor	Fair	Fair	Poor
Wildwood	5	Very   poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
651:		 							 	 		
Thiefriver	85	Good	Good	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair
Grano	5	  Fair	Poor	Fair	Fair	Fair	Poor	Poor	  Good	  Good	Fair	Fair
Huot	5	  Good	Good	  Fair	Fair	Fair	Fair	Poor	  Poor	  Good	Fair	Fair
Wildwood	5	  Very   poor	Poor	Poor	Poor	Poor	Poor	Good	  Good 	  Poor 	Poor	Good
708:		 			1		1		 	 		
Rushlake	85	Poor	Good	Fair	Fair	Good	Fair	Fair	Poor	Good	Good	Fair
Corliss	6	  Poor 	  Fair 	  Fair 	Poor	  Poor 	Poor	  Very   poor	  Very   poor	  Fair 	  Fair 	Very   poor
Redby	5	Poor	Fair	  Good	Fair	Good	Fair	    Fair	Poor	  Fair	Good	Poor

Table 18.--Wildlife Habitat--Continued

Table 18.--Wildlife Habitat--Continued

				Potenti	al for h	abitat e	lements			Potenti	al as ha	bitat for
Map symbol and component name	Percent of map unit		Grasses and	ceous	wood	erous	  Shrubs	  Wetland  plants	water	wild-	Wood-   land   wild-	Wetland   wild-   life
	1	crops	legumes	plants	trees	plants	1	1	areas	life	life	1
708:     Hangaard	     3	    Poor 	    Fair 	     <b>Fair</b> 	    Fair	  Poor	  Poor	  Good	    Good 	    Fair 	    Fair	    Good 
Pits, gravel	1							ļ				
712: Rosewood	     85	    Good	  Good	    Fair	Fair	Fair	Fair	Good	    Good	    Fair	  Fair	    Good
Deerwood	   6 	  Very   poor	  Very   poor	  Poor 	  Poor 	  Poor 	  Poor 	  Good 	  Good 	  Very   poor	  Poor 	  Good 
Hangaard	5	  Poor	Fair	  Fair	Fair	Poor	Poor	Good	  Good	  Fair	Fair	  Good
Ulen	   4	  Good	Good	  Good	Fair	Poor	Fair	Poor	  Poor	Fair	Fair	Poor
721B:     Corliss	     85 	    Poor 	    Fair 	    Fair 	    Poor 	    Poor 	    Poor 	  Very   poor	    Very   poor	    Fair 	    Fair 	    Very   poor
Rushlake	10	  Poor	  Good	  Fair	Fair	Good	Fair	  Fair	  Poor	  Good	Good	  Fair
Hangaard	   4	  Poor	  Fair	  Fair	Fair	Poor	Poor	Good	  Good	  Fair	Fair	  Good
Pits, gravel	1											
733:		 		 					 	 		 
Berner	90	Poor	Poor	Poor	Poor	Poor	Poor	Good	  Good 	Good	Poor	Good
Grygla	5   5	  Good	Good	  Fair	Fair	Fair	Fair	Good	  Fair	  Fair	Fair	  Fair
Seelyeville	5	  Very   poor	Poor	  Poor 	Poor	Poor	Poor	Good	  Good 	  Poor 	Poor	  Good 
737:   Mahkonce	     85	    Good	    Good	    Good	  Good	  Good	  Good	  Poor	    Poor	    Good	    Good	    Poor
Auganaush	10	  Good	Fair	  Fair	Fair	Fair	Fair	Good	  Fair	Fair	Fair	  Fair
Eckvoll	   5	  Fair	  Fair	  Good	Good	  Good	  Fair	Poor	  Poor	  Fair	  Good	  Poor
755: Woodslake	     85	    Poor	    Poor	    Poor	Poor	Poor	Poor	Good	    Good	    Poor	Poor	    Good
Boash	   8	  Fair	  Fair	  Fair	Fair	Poor	Poor	Poor	  Fair	  Fair	Fair	  Fair

				Potenti	al for h	abitat e	lements			Potenti	al as ha	bitat for
Map symbol	Percent	Grain	I	Wild				1		Open-	Wood-	Wetland
and	of	and	Grasses	herba-	Hard-	Conif-	Shrubs	Wetland	Shallow	land	land	wild-
component name	map unit	seed	and	ceous	wood	erous		plants	water	wild-	wild-	life
		crops	legumes	plants	trees	plants	<u> </u>	<u> </u>	areas	life	life	<u> </u>
755:	 	 							 	 		
Wildwood	l l 5	170	Poor	Poor	Poor	Poor	Poor	Good	Good	  Poor	Poor	Good
wildwood	<b>5</b>	Very   poor	POOL	POOL	POOL	POOL	POOL	GOOG	GOOG	POOL	POOL	Good
	 	1001		 	i i	 	 	i	 	 	 	l I
Dora	   2	Very	Very	Very	Poor	Poor	Poor	Good	Good	Very	Poor	Good
		poor	poor	poor						poor		İ
		!	ļ	[				ļ	[	<u> </u>		
767:												ļ
Auganaush	90	Good	Fair	Fair	Fair	Fair	Fair	Good	Fair	Fair	Fair	Fair
Mustinka	l l 5	Poor	Poor	  Fair	Fair	Fair	Poor	Good	Good	  Fair	Fair	Good
Wildwood	3	Very	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
		poor										
Mahkonce	2	Good	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
794:	 	l I		 	1	 	I I	 	 	 	 	I I
Clearriver	l 85	Poor	Good	Good	Good	Good	Fair	Fair	Very	Good	Good	Fair
									poor			
		İ	i	j	j	İ	İ	į	-	j	İ	İ
Hiwood	7	Poor	Fair	Poor	Poor	Fair	Fair	Poor	Poor	Fair	Fair	Poor
		[										
Meehan	5	Poor	Fair	Good	Fair	Fair	Fair	Fair	Poor	Fair	Fair	Poor
Faunce	   3	Poor	  Fair	  Fair	Fair	Fair	Fair	Poor	Poor	  Fair	Fair	Poor
1 441100	İ											
1002:		İ	i	j	j	İ	İ	į	İ	j	İ	İ
Fluvaquents, frequently												
flooded	90	Very	Poor	Poor	Poor	Poor	Poor	Good	Good	Very	Poor	Good
		poor								poor		
Seelyeville	   6	  Very	  Very	  Very	Very	  Very	  Very	Good	Good	  Very	  Very	Good
Seelyeville	<b>0</b>	poor	poor	poor	poor	poor	poor	GOOG	GOOG	poor	poor	Good
	 	1001	1	1001	1	POOL	POOL			1001	POOL	1
Hapludalfs	2	Poor	Good	Good	Good	Good	Good	Very	Very	Fair	Good	Very
		ĺ	İ	ĺ	İ		İ	poor	poor			poor
			[									!
Water	2											
1030:	 	I I		 	1		1	 	 	 		1
Pits, gravel	   75	 								 		
- <b>3</b> · · ·		į	i	į	İ	İ	İ	İ	İ	İ	İ	İ
Udipsamments	20	j	j	j	j	j	j	j	j	j	j	i

Table 18.--Wildlife Habitat--Continued

Table 18.--Wildlife Habitat--Continued

				Potenti	al for h	abitat e	lements			Potenti	al as ha	bitat for-
Map symbol and component name	Percent of map unit	Grain and seed	  Grasses   and	Wild  herba-   ceous	   Hard-   wood	  Conif-   erous	  Shrubs	  Wetland  plants	  Shallow   water	Open- land wild-	Wood-   land   wild-	Wetland   wild-   life
		crops	legumes	plants	trees	plants			areas	life	life	<u> </u>
1030:     Corliss	2	    Poor 	    Fair 	    Fair 	    Poor 	  Poor	    Poor 	  Very   poor	    Very   poor	    Fair 	    Fair 	    Very   poor
Karlstad	2	  Poor 	Fair	  Fair 	  Fair 	  Fair	Fair	Poor	  Very   poor	  Poor 	  Fair 	  Very   poor
   Hangaard	1	  Poor	Fair	  Fair	  Fair	Poor	Poor	Good	  Good	  Fair	Fair	Good
1031: Seelyeville, ponded	90	    Very   poor	  Very   poor	    Very   poor	  Very   poor	  Very   poor	  Very   poor	  Good	    Good 	    Very   poor	  Very   poor	  Good
Cathro	4	  Poor	Poor	  Poor	Poor	Poor	Poor	Good	  Good	  Poor	Poor	Good
Dora	3	  Very   poor	Very   poor	  Very   poor	Poor	Poor	Poor	Good	  Good 	  Very   poor	Poor	  Good 
Markey	3	  Very   poor	Very   poor	  Poor 	  Poor 	Poor	Poor	Good	  Good 	  Poor 	  Poor 	  Good 
1067:   Fluvaquents, frequently		   		   		 			   	   	   	   
flooded	60	Very   poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Very   poor	Poor	Good
Hapludalfs	30	  Poor 	Good	  Good 	Good	  Good 	Good	Very   poor	  Very   poor	  Fair 	Good	  Very   poor
Seelyeville	5	  Very   poor	Very   poor	  Very   poor	Very   poor	Very   poor	Very   poor	Good	  Good 	  Very   poor	Very   poor	  Good 
Water	5	 		 					 	 		
1133B:   Skime	85	    Poor	    Fair	    Fair	    Fair	    Fair	Fair	    Poor	    Poor	    Fair	    Fair	    Poor
Hiwood	10	  Poor	Fair	  Poor	Poor	Fair	Fair	Poor	  Poor	  Fair	Fair	Poor
Zippel	5	  Good	Good	  Fair	  Fair	  Fair	  Fair	Good	  Good 	  Good	  Fair	  Good
1134:   Borup	55	    Good	    Good	    Fair	    Fair	    Fair	    Fair	    Good	    Good	    Fair	    Fair	    Good
Glyndon	35	  Good	Good	  Good	Good	  Fair	Fair	Poor	  Poor	  Good	Fair	  Poor

				Potenti	al for h	abitat e	lements			Potenti	al as ha	bitat for
Map symbol	Percent	Grain		Wild						Open-	Wood-	Wetland
and	of	and	Grasses	herba-	Hard-	Conif-	Shrubs	Wetland	Shallow	land	land	wild-
component name	map unit	seed	and	ceous	wood	erous		plants	water	wild-	wild-	life
		crops	legumes	plants	trees	plants			areas	life	life	
1134:									l i			
		   <b> </b>	   D = = = =		   D	   D	   <b> </b>			   D = ===	   B	
Augsburg, depressional	5 	Poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Skime	5	Poor	Fair	Fair	Fair	Fair	Fair	Poor	Poor	Fair	Fair	Poor
1144:	 	 	İ					 	 	 		
Strathcona, depressional	45	Poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Kratka, depressional	   45	  Poor	Poor	  Poor	Poor	Poor	Poor	Good	  Good	  Poor	Poor	Good
Kiatka, depiessionai	43								G000			
Kratka	5	Good	Good	Fair	Fair	Poor	Fair	Good	Fair	Fair	Fair	Fair
Northwood	   5	  Very	  Very	  Poor	Poor	Poor	Poor	Good	  Good	  Very	Poor	Good
	İ	poor	poor							poor		
		ļ	ļ							ļ		
1154:												
Sax	90	Very	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
	 	poor		 				 	 	 	 	
Wabanica	5	Good	Good	Fair	Fair	Fair	Fair	Good	Fair	Fair	Fair	Fair
		ļ	ļ							ļ		
Cathro	3 	Poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Woodslake	2	Poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
	j	į	į	į	į	į	į	į	ĺ	į	į	į
1158:												
Skagen	85	Good	Good	Good	Good	Fair	Good	Poor	Poor	Good	Good	Poor
Percy	10	Good	Good	Fair	Fair	Fair	Fair	Good	  Good	Good	Fair	Fair
		ĺ	İ	ĺ		İ		İ		ĺ	į	į
Foxhome	5	Good	Good	Good	Fair	Fair	Fair	Poor	Poor	Good	Fair	Poor
1170:	 	 	i i		1	İ	1	 	 	 	 	
Skagen, very cobbly	85	Good	Good	Good	Good	Fair	Good	Poor	Poor	Good	Good	Poor
	!	ļ	ļ	[		ļ		!		ļ		
Percy, very cobbly	10	Good	Good	Fair	Fair	Fair	Fair	Good	Good	Good	Fair	Fair
Foxhome	5	Good	Good	Good	Fair	Fair	Fair	Poor	Poor	Good	Fair	Poor
	]	[	ļ		!		!	[	l	[	[	[
1179B:												
Moranville	85	Fair	Good	Good	Good	Good	Fair	Poor	Poor	Fair	Good	Poor
Baudette	   5	  Good	Good	  Good	Good	Good	Good	  Very	  Very	  Good	  Good	  Very
	<u> </u>							poor	poor			poor
	į	į	į	į	į	į	į	į		į	į	-

Table 18.--Wildlife Habitat--Continued

Table 18.--Wildlife Habitat--Continued

				Potenti	al for h	abitat e	lements			Potent	al as ha	bitat for
Map symbol and component name	Percent of map unit	Grain and seed crops	  Grasses   and  legumes	ceous	Hard-   wood   trees	Conif-   erous  plants	  Shrubs 	  Wetland  plants	  Shallow   water   areas	Open-   land   wild-   life	Wood-   land   wild-   life	Wetland   wild-   life
1179B:	 	 		 					 			
Hiwood	5 	Poor	Fair	Poor	Poor	Fair	Fair	Poor	Poor	Fair	Fair	Poor
Spooner	5	  Good	Fair	  Fair	Fair	Fair	Fair	Fair	  Fair	Good	Good	Fair
1181:	 			 					 			
Rosewood	50	Good	Good	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
Ulen	   40	  Good	Good	  Good	Fair	Poor	Fair	Poor	  Poor	  Fair	Fair	Poor
Redby	   5 	  Poor	Fair	  Good 	Fair	Good	Fair	Fair	  Poor	  Fair 	Good	Poor
Deerwood	   3 	  Very   poor	Very   poor	  Poor 	Poor	Poor	Poor	Good	  Good 	  Very   poor	Poor	Good
Syrene	   2	  Fair	Fair	  Fair 	Fair	Poor	Fair	Good	  Good	  Fair	Fair	Good
1182: Warroad	     85	    Good	Good	    Good	Fair	    Fair	Fair	Good	    Fair	    Fair	    Fair	Fair
Wabanica	   7	  Good	Good	  Fair	Fair	Fair	Fair	Good	  Fair	  Fair	  Fair	Fair
Enstrom	   5	  Fair	  Fair	  Fair	Fair	Fair	Fair	Poor	  Poor	  Fair	Good	Poor
Sax	   3 	  Very   poor	Poor	  Poor 	Poor	Poor	Poor	Good	  Good 	  Poor 	Poor	Good
1187:	 	 		 					 			
Dora, ponded	90	Very   poor	Very   poor	Very   poor	Very   poor	Very   poor	Very   poor	Good	Good	Very   poor	Very   poor	Good
Seelyeville, ponded	   4 	  Very   poor	  Very   poor	  Very   poor	  Very   poor	  Very   poor	  Very   poor	  Good	  Good 	  Very   poor	  Very   poor	  Good 
Wildwood	   <b>4</b> 	  Very   poor	  Poor 	  Poor 	  Poor	Poor	Poor	  Good	  Good 	  Poor 	  Poor 	Good
Boash	   2	  Fair 	  Fair	  Fair 	  Fair	  Poor	Poor	Poor	  Fair 	  Fair	  Fair	Fair
1191: Sahkahtay	     85	    Fair	  Fair	    Fair	Fair	    Fair	Fair	    Fair	    Good	    Fair	    Fair	  Fair
Cormant	   5 	  Poor 	  Fair 	  Fair 	  Fair 	  Fair 	  Fair 	  Good 	  Good 	  Fair 	  Fair 	Good

		l		Potenti	al for h	abitat e	lements			Potenti	al as ha	bitat for
Map symbol	Percent	Grain		Wild						Open-	Wood-	Wetland
and	of	and	Grasses	herba-	Hard-	Conif-	Shrubs	Wetland	Shallow	land	land	wild-
component name	map unit	seed	and	ceous	wood	erous		plants	water	wild-	wild-	life
		crops	legumes	plants	trees	plants			areas	life	life	
						ļ						
1191:	_											1
Deerwood	5	Very	Very	Poor	Poor	Poor	Poor	Good	Good	Very	Poor	Good
	  -	poor	poor						 	poor		
Karlstad	l   3	Poor	Fair	  Fair	Fair	Fair	Fair	Poor	  Very	Poor	  Fair	Very
Raiscau	3	FOOT	Fall	Fair	Fair	Fall	Fair	FOOT	poor	FOOT	Fall	poor
	 	 			İ				1001	 		
Redby	   2	Poor	Fair	Good	Fair	Good	Fair	Fair	Poor	Fair	Good	Poor
	İ				İ			İ		ĺ		
1206:	İ	į	į	į	İ	İ	İ	į	İ	į	İ	İ
Cormant	55	Poor	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
Redby	35	Poor	Fair	Good	Fair	Good	Fair	Fair	Poor	Fair	Good	Poor
Hiwood	5	Poor	Fair	Poor	Poor	Fair	Fair	Poor	Poor	Fair	Fair	Poor
Leafriver	5	Very	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
		poor										
1214:	 								 	 		1
Mustinka	   90	Poor	Poor	  Fair	Fair	Fair	Poor	Good	  Good	  Fair	  Fair	Good
Muscinka	50 							0000	<b>GOOG</b> 			
Espelie	4	Good	Good	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
	_											
Wildwood	4	Very	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
	İ	poor	i	İ	İ	i	i	İ		İ	İ	İ
	İ	į	į	į	İ	į	İ	İ	İ	į	İ	İ
Dalbo	2	Good	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
1274B:												
Redby	40	Poor	Fair	Good	Fair	Good	Fair	Fair	Poor	Fair	Good	Poor
Hiwood	30	Poor	Fair	Fair	Fair	Fair	Fair	Poor	Poor	Fair	Fair	Poor
T 5 - 1			   D			   D	150000					
Leafriver, wooded	15	Very	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
	l I	poor		 					 	l I	l I	I I
Clearriver	l l 5	Poor	Good	  Good	Good	Good	Fair	  Fair	  Very	  Good	  Good	Fair
Cleariver	3	1001	0000	3000	0000	0000		raii	poor	<b>GOO</b> Q	0000	raii
	! 	i		 	İ		1	i i	1001	i i	l I	i i
Cormant	l   5	Poor	Fair	Fair	Fair	Fair	Fair	Good	  Good	Fair	Fair	Good
Zimmerman	5	Poor	Fair	Poor	Fair	Fair	Fair	Very	Very	Poor	Fair	Very
	İ	i	i	į	İ	İ	İ	poor	poor	į	į	poor
	İ	i	i	i	i	i	i	į -	. <i>-</i>	i	İ	i

Table 18.--Wildlife Habitat--Continued

Table 18.--Wildlife Habitat--Continued

		[			al for n	abitat e	lements					bitat for-
Map symbol	Percent	Grain		Wild						Open-	Wood-	Wetland
and	of	and	Grasses	!	1	Conif-	Shrubs	1	Shallow		land	wild-
component name	map unit	seed	and	ceous	wood	erous		plants	water	wild-	wild-	life
		crops	legumes	plants	trees	plants		<u> </u>	areas	life	life	<u> </u>
1298:		[ [	1	 	l I		 		 	[ [		
Borup	90	Good	Good	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
Augsburg, depressional	3	  Poor	Poor	  Poor	Poor	Poor	  Poor	  Good	  Good	  Poor	  Poor	Good
Glyndon	3	  Good	Good	  Good	Good	  Fair	  Fair	  Poor	  Poor	  Good	  Fair	Poor
Sago	2	  Very   poor	Poor	  Poor 	Poor	Poor	  Poor 	  Good 	  Good 	  Poor 	  Poor 	Good
Skime	2	  Poor	  Fair	  Fair 	Fair	  Fair	  Fair 	  Poor	  Poor	  Fair 	  Fair 	Poor
1302:				 			 		 	 	 	
Foldahl	85	Good	Good	Good	Good	Fair	Fair	Poor	Poor	Good	Fair	Poor
Kratka	10	Good	Good	  Fair	Fair	Poor	Fair	Good	  Fair	Fair	Fair	Fair
Foxhome	5	  Good	Good	  Good	Fair	Fair	  Fair	Poor	  Poor	Good	Fair	Poor
1304:				! 								
Glyndon	85	Good	Good	Good	Good	Fair	Fair	Poor	Poor	Good	Fair	Poor
Borup	10	  Good	Good	  Fair 	Fair	Fair	  Fair	  Good	  Good	  Fair	Fair	Good
Skime	5	  Poor	Fair	  Fair 	Fair	Fair	  Fair	Poor	  Poor	  Fair	Fair	Poor
1305:				 			 		 	 	 	
Hilaire	85	Good	Good	Good	Fair	Fair	Fair	Poor	Poor	Fair	Fair	Poor
Espelie	11	Good	Good	  Fair	Fair	Fair	Fair	Good	  Good	  Fair	Fair	Good
Grano	2	  Fair	Poor	  Fair	Fair	Fair	Poor	Poor	  Good	  Good	Fair	Fair
Redby	2	  Poor	Fair	  Good	Fair	Good	  Fair	  Fair	  Poor	  Fair	Good	Poor
1314: Tacoosh	90	    Poor	Poor	    Poor	Poor	Poor	    Poor	    Good	    Good	    Poor	    Poor	    Good
Rifle	8	Poor	Poor	Poor	Poor	Poor	Poor	Good	  Good	Poor	  Poor	Good
Sax	2	  Very   poor	Poor	  Poor 	Poor	  Poor 	  Poor 	  Good 	  Good 	  Poor 	  Poor 	  Good 

		l		Potenti	al for h	abitat e	lements			Potenti	al as ha	bitat for
Map symbol	Percent	Grain		Wild						Open-	Wood-	Wetland
and	of	and	Grasses	herba-	Hard-	Conif-	Shrubs	Wetland	Shallow	land	land	wild-
component name	map unit	seed	and	ceous	wood	erous	İ	plants	water	wild-	wild-	life
		crops	legumes	plants	trees	plants	İ	İ	areas	life	life	İ.
1316:												
Wheatville	85	Good	Good	Good	Fair	Poor	Fair	Poor	Fair	Good	Fair	Fair
Augsburg	13	  Good	Good	  Fair	  Fair	Poor	  Fair	  Fair	  Fair	  Good	  Fair	  Fair
Grano	2	Fair	Poor	Fair	Fair	Fair	Poor	Poor	Good	Good	Fair	Fair
1326:												i
Augsburg, depressional	45	Poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
		ļ		[						ļ		!
Wabanica, depressional	45	Poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Sax	6	  Very	Poor	  Poor	Poor	Poor	Poor	Good	Good	  Poor	Poor	Good
<del></del>		poor										
		į	į	į	į	į	į	į	j	į	į	į
Espelie	2	Good	Good	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
					<u> </u>							
Zippel	2	Good	Good	Fair	Fair	Fair	Fair	Good	Good	Good	Fair	Good
1327B:		 			i i	 	i i		 	 		
Karlstad	65	Poor	Fair	Fair	Fair	Fair	Fair	Poor	Very	Poor	Fair	Very
									poor			poor
	0.5											
Marquette	25	Poor	Poor	Fair	Poor	Fair	Poor	Very   poor	Very   poor	Poor	Poor	Very   poor
		 		 		 		10001	<b>p</b> 001	 	 	
Sahkahtay	7	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Good	Fair	Fair	Fair
		ĺ	İ	ĺ	İ	İ	İ	İ	ĺ	ĺ		İ
Redby	3	Poor	Fair	Good	Fair	Good	Fair	Fair	Poor	Fair	Good	Poor
1328:									 			
Northwood, wooded	90	  Very	  Very	  Poor	Poor	Poor	Poor	  Good	  Good	  Very	Poor	Good
norenwood, wooded		poor	poor							poor		
		į	į -	į	į	į	į	į	j	į	į	į
Berner, wooded	5	Very	Poor	Poor	Poor	Poor	Poor	Good	Good	Fair	Poor	Good
		poor										
Grygla	5	Good	Good	  Fair	  Fair	  Fair	  Fair	Good	  Fair	  Fair	  Fair	  Fair
Giygia												
1333:		İ	İ		İ	İ	İ	İ	İ	İ	İ	İ
Dora, wooded	90	Very	Very	Very	Poor	Poor	Poor	Good	Good	Very	Poor	Good
		poor	poor	poor					<u> </u>	poor		
T												
Lupton	4	Very	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
		poor	 	! 		 		 	 	! 		
		1	1	1	1	1	1	1	1	1	1	1

Table 18.--Wildlife Habitat--Continued

Table 18.--Wildlife Habitat--Continued

Map symbol		Potential for habitat elements								Potential as habitat for			
<u></u>	Percent	Grain		Wild						Open-	Wood-	Wetland	
and	of	and	Grasses	herba-	Hard-	Conif-	Shrubs	Wetland	Shallow	land	land	wild-	
component name	map unit	seed	and	ceous	wood	erous		plants	water	wild-	wild-	life	
		crops	legumes	plants	trees	plants	<u> </u>	<u> </u>	areas	life	life	<u> </u>	
1333:				 					 	  -			
Wildwood	4	Very	Poor	Poor	Poor	Poor	Poor	Good	  Good	Poor	Poor	Good	
 	4	poor							G00a   			G00d 	
Auganaush	2	Good	Fair	  Fair 	Fair	Fair	Fair	Good	  Fair 	  Fair 	Fair	  Fair 	
1356:				 	i			i	 	l I		İ	
Water, miscellaneous.				   					   	   			
1399B:				! 			İ		! 	! 	İ	İ	
Two Inlets	85	Poor	Fair	Poor	Poor	Fair	Fair	Very	Very	Fair	Fair	Very	
			 	 			1	poor	poor	 		poor	
Wurtsmith	6	Poor	Fair	Fair	Fair	Good	Fair	Poor		Fair	Good	Poor	
				 					poor	 		 	
Zimmerman	6	Poor	Fair	Poor	Fair	Fair	Fair	Very	  Very	Poor	Fair	Very	
								poor	poor			poor	
Meehan	3	Poor	  Fair	  Good	Fair	Fair	Fair	  Fair	  Poor	  Fair	  Fair	  Poor	
1401:				 			1	1	 	 		 	
Grygla, depressional	90	Poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good	
Northwood, wooded	5	Very	  Very	  Poor	Poor	Poor	Poor	Good	  Good	  Very	Poor	  Good	
		poor	poor							poor		[	
Chilgren	3	Good	Good	  Fair	Fair	Fair	Fair	Good	  Fair	  Good	Good	  Fair	
 	2	Good	Good	  Fair	Fair	  Fair	Fair	Good	  Fair	  Fair	Fair	  Fair	
-	_												
1402:												[	
Leafriver, wooded	90	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good	
Cormant	4	Poor	  Fair	  Fair	Fair	  Fair	  Fair	Good	  Good	  Fair	  Fair	  Good	
į													
Tawas	4	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good 	Fair 	Poor	Good 	
   Redby	2	Poor	  Fair	  Good	Fair	Good	Fair	  Fair	  Poor	  Fair	Good	  Poor	

Table 18.--Wildlife Habitat--Continued

				Potenti	al for h	abitat e	lements			Potential as habitat for			
Map symbol	Percent	Grain		Wild						Open-	Wood-	Wetland	
and	of	and	Grasses	1	1		Shrubs	Wetland			land	wild-	
component name	map unit	:	and	ceous	wood	erous		plants	water	wild-	wild-	life	
		crops	legumes	plants	trees	plants	1	1	areas	life	life		
1404:		 	1	 			 		 	 	1	1	
Berner, wooded	90	Very	Poor	Poor	Poor	Poor	Poor	Good	Good	Fair	Poor	Good	
		poor											
Lupton	4	  Very	Poor	  Poor	Poor	Poor	Poor	Good	  Good	Poor	Poor	Good	
		poor											
Northwood, wooded	4	  Very	  Very	  Poor	Poor	Poor	Poor	Good	  Good	  Very	Poor	Good	
		poor	poor							poor			
	•						<u> </u> .						
Grygla	2	Good	Good	Fair	Fair	Fair	Fair	Good	Fair 	Fair	Fair	Fair	
1405:		! 	İ		İ	İ	İ		! 	İ	İ		
Lallie	90	Very	Very	Poor	Very	Very	Very	Good	Good	Very	Very	Good	
		poor	poor		poor	poor	poor			poor	poor		
Sax	7	  Very	Poor	  Poor	Poor	Poor	Poor	Good	  Good	  Poor	Poor	Good	
Sax	,	poor						Good	<b>G</b> OOQ				
i		į	į	İ	į	į	İ	į	İ	į	į	į	
Wabanica	3	Good	Good	Fair	Fair	Fair	Fair	Good	Fair	Fair	Fair	Fair	
1414:		 	1	 					 	 			
Nereson, very cobbly	85	Good	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor	
Percy, very cobbly	10	Good	Good	Fair	Fair	Fair	Fair	Good	Good	Good	Fair	Fair	
Pelan	3	Poor	Fair	Fair	Fair	Fair	Fair	Poor	Poor	Fair	Fair	Poor	
Foxhome	2	Good	Good	  Good	Fair	Fair	  Fair	Poor	  Poor	Good	Fair	Poor	
roxnome	2	G000	Good	G00a 	Fair	Fair	rair		1001	G000	Fair		
1428:		j	İ	j	İ	į	İ	İ	İ	į	į	İ	
Karlsruhe	85	Fair	Good	Good	Fair	Fair	Fair	Fair	Poor	Good	Fair	Poor	
Syrene	10	  Fair	Fair	  Fair	Fair	Poor	  Fair	Good	  Good	  Fair	Fair	Good	
			İ								İ		
Ulen	5	Good	Good	Good	Fair	Poor	Fair	Poor	Poor	Fair	Fair	Poor	
1444:		! 		 				]	 	[ ]			
Wurtsmith	85	Poor	Fair	Fair	Fair	Good	Fair	Poor	Very	Fair	Good	Poor	
			ļ						poor				
Meehan	10	  Poor	Fair	  Good	Fair	  Fair	  Fair	  Fair	  Poor	  Fair	Fair	Poor	
Meenan	10	12001	Lair	Jood	Lair	Fall	Larr	Lair	1.001	Lair	Fall	12001	

Table 18.--Wildlife Habitat--Continued

				Potenti	al for f	abitat e	lements			Potential as habitat for-			
Map symbol	Percent	Grain		Wild						Open-	Wood-	Wetland	
and	of	and	Grasses	herba-	Hard-	Conif-	Shrubs	Wetland	Shallow	land	land	wild-	
component name	map unit	seed	and	ceous	wood	erous		plants	water	wild-	wild-	life	
		crops	legumes	plants	trees	plants	<u>i</u>	<u> </u>	areas	life	life	İ	
1444													
1444:	•						150.40	l market	 			1	
Clearriver	2	Poor	Good	Good 	Good	Good	Fair	Fair	Very   poor	Good 	Good	Fair	
Two Inlets	2	Poor	  Fair	  Poor	Poor	  Fair	  Fair		  Very	  Fair	  Fair	170	
Two injets								Very   poor	poor	<b>Fair</b>   	Fair	Very   poor	
Cormant	1	Poor	Fair	  Fair 	Fair	Fair	Fair	Good	  Good 	  Fair 	Fair	  Good 	
1448:			İ	İ	Ì	İ		İ		İ			
Grano	90	Poor	Poor	Fair	Fair	Fair	Poor	Poor	Good	Good	Fair	Fair	
Percy	5	Good	Good	  Fair	Fair	Fair	Fair	Good	  Good	  Good	Fair	Fair	
Augsburg	3	Good	Good	  Fair	Fair	Poor	Fair	Fair	  Fair	Good	Fair	Fair	
Woodslake	2	Poor	Poor	  Poor	Poor	Poor	Poor	Good	  Good	  Poor	Poor	Good	
1449:				 					 	 			
Grano	90	Fair	Poor	Fair	Fair	Fair	Poor	Poor	Good	Good	Fair	Fair	
Percy	5	Good	Good	  Fair	Fair	Fair	Fair	Good	  Good	  Good	Fair	  Fair	
Augsburg	3	Good	Good	  Fair	Fair	Poor	Fair	  Fair	  Fair	  Good	Fair	  Fair	
Woodslake	2	Poor	Poor	  Poor	Poor	Poor	Poor	Good	  Good	  Poor	Poor	Good	
1807:		 		 	l I				 	 			
Cathro, ponded	90	Very	Very	Very	Very	Very	Very	Good	Good	Very	Very	Good	
		poor	poor	poor	poor	poor	poor	į	į	poor	poor	į	
Haug	4	  Very	  Very	  Poor	Poor	Poor	Poor	  Good	  Good	  Very	Poor	Good	
		poor	poor	 					 	poor			
Seelyeville, ponded	4	Very	Very	  Very	Very	Very	Very	Good	  Good	  Very	Very	Good	
		poor	poor	poor	poor	poor	poor			poor	poor		
Percy	2	  Good	Good	  Fair	Fair	Fair	Fair	Good	  Good	  Good	Fair	Fair	
1808:				 	i i		1		 	 			
Markey, ponded	90	Very poor	Very   poor	  Very   poor	   Very   poor	  Very   poor	Very	Good	Good	  Very   poor	  Very   poor	Good	
		- 1	į	į	į		į	į	į	_	į	į	
Leafriver	4	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good	

Table 18.--Wildlife Habitat--Continued

I		l		Potenti	al for h	abitat e	lements			Potenti	al as ha	Potential as habitat for			
Map symbol	Percent	Grain		Wild						Open-	Wood-	Wetland			
and	of	and	Grasses	herba-	Hard-	Conif-	Shrubs	Wetland	Shallow	land	land	wild-			
component name	map unit	seed	and	ceous	wood	erous		plants	water	wild-	wild-	life			
		crops	legumes	plants	trees	plants			areas	life	life	L			
1808:										ļ i					
Seelyeville, ponded	4	  Very	  Very	  Very	Very	Very	Very	Good	  Good	  Very	  Very	Good			
seelyeville, ponded	*	poor		poor	poor		poor	GOOG	GOOG		poor	GOOG			
i		10001	poor	poor	DOOL	poor	DOOL		 	poor	poor				
Cormant	2	Poor	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good			
1918:		 		 		l I			 	 					
Croke	85	Good	Good	Good	Good	Fair	Fair	Poor	Fair	Good	Fair	Poor			
į		j	į	į	į	į	į	į	j	j	į	į			
Augsburg	13	Good	Good	Fair	Fair	Poor	Fair	Fair	Fair	Good	Fair	Fair			
Grano	2	Fair	Poor	Fair	Fair	Fair	Poor	Poor	Good	Good	Fair	Fair			
   1923B:		 		 					 	 	 				
Garnes, very stony	85	Good	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor			
						İ						İ			
Chilgren	10	Good	Good	Fair	Fair	Fair	Fair	Good	Fair	Good	Good	Fair			
ļ												[			
Eckvoll	3	Fair	Fair	Good	Good	Good	Fair	Poor	Poor	Fair	Good	Poor			
   Pelan	2	Poor	Fair	  Fair	Fair	Fair	Fair	Poor	  Poor	  Fair	  Fair	Poor			
	2	FOOT	Fall	Fair	Fair	Fair	Fair		FOOT	<b>Faii</b> 	Fair				
1984:		İ	İ		İ	İ	İ	İ	İ	İ	İ	İ			
Leafriver	90	Very	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good			
İ		poor		ĺ	İ	İ	İ		ĺ		İ	İ			
I															
Cormant	5	Poor	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good			
Wassland	3		  Verv	  Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good			
Markey	3	Very   poor		POOT	POOT	POOT	POOT	GOOG	Good	POOT	POOT	Good			
ļ		   boor	poor	 	1		1		 	 	 				
Redby	2	Poor	Fair	Good	Fair	Good	Fair	Fair	Poor	Fair	Good	Poor			
W:		 							 	 					
w:   Water.		 	 	 	1	1	1	 	 	 	 				
macer.		!	1	!	1	!	1	!	!	!	!	!			

Table 19.--Building Site Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. See text for definitions of terms used in this table. Absence of an entry indicates that no rating is applicable.)

		:	!	!	!	1	!
Map symbol and	of	Shallow	Dwellings	Dwellings	Small	Local roads	Lawns and
component name	map unit	excavations	without	with	commercial	and streets	landscaping
			basements	basements	buildings	1	
17:		 					
Colvin	85	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
į		wetness	wetness	wetness	wetness	frost action	wetness
						low strength	
!				ļ		wetness	
Bearden	5	  Severe:	  Moderate:	  Severe:	  Moderate:	  Severe:	  Moderate:
		wetness	shrink-swell	wetness	shrink-swell	frost action	wetness
			wetness		wetness	low strength	
Grano	5	  Severe:	  Severe:				
Giano	3	wetness	shrink-swell	shrink-swell	shrink-swell	low strength	too clayey
		cutbanks cave	wetness	wetness	wetness	shrink-swell	wetness
i						wetness	""
į				i			İ
Sax	5	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		ponding	ponding	ponding	ponding	frost action	excess humus
						ponding	ponding
18B:		 					
Hiwood	85	Severe:	Slight	Moderate:	Slight	Moderate:	Moderate:
]		cutbanks cave		wetness		frost action	droughty
Redby	7	  Severe:	  Moderate:	  Severe:	  Moderate:	  Moderate:	  Moderate:
		wetness	wetness	wetness	wetness	frost action	wetness
į		cutbanks cave	İ	į		wetness	droughty
Clearriver	3	  Severe:	  Slight	  Moderate:	  Slight	  Slight	  Severe:
Clearityer	3	cutbanks cave		wetness	biight	biigne	droughty
				#CCHCSS			droughey
Cormant	3	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		wetness	wetness	wetness	wetness	wetness	wetness
		cutbanks cave					
Zimmerman	2	  Severe:	  Slight	  Slight	  Slight	  Slight	  Moderate:
į		cutbanks cave	i	i	i	i	droughty
52:		 		1			
Augsburg	85	  Severe:	Severe:	  Severe:	  Severe:	Severe:	Severe:
		wetness	wetness	shrink-swell	wetness	frost action	wetness
			1			The second secon	

	Percent						
Map symbol and component name	of map unit	Shallow   excavations	Dwellings without	Dwellings with	Small   commercial	Local roads	Lawns and
			basements	basements	buildings		
52:	 	 					
Croke	5	  Severe:   cutbanks cave	Slight 	Severe:	Slight	Severe:   frost action	  Slight 
Grano	   5   	  Severe:   wetness   cutbanks cave	  Severe:   shrink-swell   wetness	Severe:   shrink-swell   wetness	Severe:   shrink-swell   wetness	Severe:   low strength   shrink-swell   wetness	Severe:   wetness
Sago	   5 	  Severe:   ponding   cutbanks cave	  Severe:   ponding	Severe:   ponding	  Severe:   ponding	  Severe:   frost action   ponding	  Severe:   excess humus   ponding
59:	 	 					
Grimstad	   85   	Severe:   wetness   cutbanks cave	Moderate:   wetness	Severe:   wetness	Moderate:   wetness	Moderate:   frost action   wetness	Moderate: wetness
Strathcona	   12 	Severe:   wetness   cutbanks cave	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   frost action   wetness	Severe:   wetness
Foxhome	   3 	  Severe:   cutbanks cave	  Slight 	  Moderate:   wetness	  Slight 	  Severe:   frost action	  Slight 
64:	 	 					
Ulen	85 	Severe:   cutbanks cave	Slight 	Severe:   wetness	Slight	Moderate:   frost action	Moderate:   droughty
Rosewood	   10 	  Severe:   wetness   cutbanks cave	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness
Redby	   3 	  Severe:   wetness   cutbanks cave	Moderate:   wetness	Severe:   wetness	Moderate:   wetness	Moderate:   frost action   wetness	Moderate:   wetness   droughty
Rushlake	   2 	  Severe:   cutbanks cave	  Slight 	  Moderate:   wetness	  Slight 	Moderate:   frost action	Severe:   droughty
65:		 					
Foxhome	85 	Severe:   cutbanks cave	Slight 	Moderate:   wetness	Slight	Severe:   frost action	Slight 
Strandquist	   12 	  Severe:   wetness 	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   frost action   wetness	Severe:   wetness

Table 19.--Building Site Development--Continued

Table 19.--Building Site Development--Continued

Map symbol and	Percent of	   Shallow	   Dwellings	   Dwellings	Small	Local roads	Lawns and
component name	map unit	excavations	without   basements	with   basements	commercial   buildings	and streets	landscaping
65: 							
Skagen    	3	Moderate:   wetness	Slight 	Moderate:   wetness	Slight 	Severe:   frost action	Slight 
67:		 					
Bearden	85	Severe:   wetness	Moderate:   shrink-swell   wetness	Severe:   wetness	Moderate:   shrink-swell   wetness	Severe:   frost action   low strength	Moderate: wetness
Colvin	15	  Severe:   wetness 	  Severe:   wetness 	Severe:   wetness	Severe:   wetness	Severe:   frost action   low strength   wetness	Severe:   wetness
77:		 					
Garnes	85	Moderate:   wetness	Slight 	Moderate:   wetness	Slight	Severe:   frost action	Slight
Chilgren	10	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   frost action   wetness	Severe:   wetness
Eckvoll	3	  Severe:   cutbanks cave	  Slight   	  Moderate:   shrink-swell   wetness	  Slight 	  Severe:   frost action	  Slight 
Pelan	2	  Severe:   cutbanks cave	  Slight 	  Moderate:   wetness	  Slight 	  Moderate:   frost action	Moderate:   droughty
111:		 					
Hangaard	90	Severe:   wetness   cutbanks cave	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness   droughty
Deerwood	5	Severe:   ponding   cutbanks cave	Severe:   ponding 	Severe:   ponding	Severe:   ponding	Severe:   ponding	Severe:   excess humus   ponding
Rushlake	3	  Severe:   cutbanks cave	  Slight 	  Moderate:   wetness	  Slight 	Moderate:   frost action	  Severe:   droughty
Rosewood	2	  Severe:   wetness   cutbanks cave	  Severe:   wetness	  Severe:   wetness	Severe:   wetness		  Severe:   wetness

	Percent						
Map symbol and	of	Shallow	Dwellings	Dwellings	Small	Local roads	Lawns and
component name	map unit	excavations	without	with	commercial	and streets	landscaping
		1	basements	basements	buildings	1	1
.16:		 					
Redby	85	Severe:	Moderate:	Severe:	Moderate:	Moderate:	Moderate:
		wetness	wetness	wetness	wetness	frost action	wetness
į		cutbanks cave			İ	wetness	droughty
   Cormant	8	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
į		wetness	wetness	wetness	wetness	wetness	wetness
į		cutbanks cave		į	į		į
   Hiwood	6	  Severe:	Slight	  Moderate:	  Slight	  Moderate:	  Moderate:
	· ·	cutbanks cave		wetness		frost action	droughty
Leafriver	1	 	Corremo	Gorrama	Corromo	  Severe:	  Severe:
neartivet	1	Severe:	Severe:	Severe:	Severe:	severe:	severe:
		ponding cutbanks cave	ponding	ponding	ponding		
		Cutbanks cave				ponding	ponding
117:				į.	į.		İ
Cormant	85	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
ļ		wetness	wetness	wetness	wetness	wetness	wetness
		cutbanks cave					
Leafriver	7	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		ponding	ponding	ponding	ponding	frost action	excess humus
		cutbanks cave				ponding	ponding
Epoufette	3	  Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		wetness	wetness	wetness	wetness	frost action	wetness
		cutbanks cave				wetness	droughty
Redby	3	  Severe:	  Moderate:	  Severe:	  Moderate:	Moderate:	Moderate:
į		wetness	wetness	wetness	wetness	frost action	wetness
į		cutbanks cave		į	į	wetness	droughty
Grygla, depressional	2	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
15 17 112		ponding	ponding	ponding	ponding	frost action	ponding
į		cutbanks cave				ponding	
   L33:		 					
Dalbo	85	  Moderate:	Severe:	Severe:	Severe:	Severe:	Slight
İ		too clayey	shrink-swell	shrink-swell	shrink-swell	low strength	
į		wetness				shrink-swell	
  Mustinka	10	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
i		wetness	wetness	wetness	wetness	frost action	wetness
İ			1	İ		low strength	
<u>'</u>		i	i	i	i	wetness	i

Table 19.--Building Site Development--Continued

Table 19.--Building Site Development--Continued

Map symbol and component name	Percent   of   map unit 	   Shallow   excavations	Dwellings without basements	Dwellings with basements	Small   commercial   buildings	Local roads and streets	Lawns and landscaping
133: Moranville	     5 	    Severe:   cutbanks cave	    Moderate:   shrink-swell 	  Moderate:   shrink-swell   wetness	  Moderate:   shrink-swell	  Severe:   frost action   low strength	  Moderate:   droughty
145: Enstrom	     85 	    Severe:   cutbanks cave	    Slight   	  Moderate:   shrink-swell   wetness	    Slight 	  Moderate:   frost action	  Moderate:   droughty
Grygla	   10 	  Severe:   wetness   cutbanks cave	Severe:   wetness	  Severe:   wetness	Severe:   wetness	  Severe:   frost action   wetness	  Severe:   wetness
Redby	   <b>4</b> 	  Severe:   wetness   cutbanks cave	  Moderate:   wetness	Severe:   wetness	Moderate:   wetness	  Moderate:   frost action   wetness	  Moderate:   wetness   droughty
Pelan	   1 	  Severe:   cutbanks cave	  Slight 	  Moderate:   wetness	  Slight 	  Moderate:   frost action	  Moderate:   droughty
147: Spooner	     85 	    Severe:   wetness	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness	  Severe:   frost action   wetness	  Severe:   wetness
Baudette	   5 	  Severe:   cutbanks cave 	  Moderate:   shrink-swell 	  Moderate:   wetness	  Moderate:   shrink-swell	  Severe:   frost action   low strength	  Slight   
Grygla	   5 	  Severe:   wetness   cutbanks cave	  Severe:   wetness	  Severe:   wetness	Severe:   wetness	  Severe:   frost action   wetness	  Severe:   wetness
Sago	   5 	  Severe:   ponding   cutbanks cave	  Severe:   ponding	  Severe:   ponding	Severe:   ponding	  Severe:   frost action   ponding	  Severe:   excess humus   ponding
158B: Zimmerman	     85 	  Severe:   cutbanks cave	    Slight 	    slight 	  slight	    Slight 	  Moderate:   droughty
Hiwood	   6 	  Severe:   cutbanks cave 	  Slight   	  Moderate:   wetness	  Slight 	  Moderate:   frost action	  Moderate:   droughty

	Percent						
Map symbol and	of	Shallow	Dwellings	Dwellings	Small	Local roads	Lawns and
component name	map unit	excavations	without	with	commercial	and streets	landscapin
			basements	basements	buildings	1	1
158B:							
Two Inlets	6   	Severe:   cutbanks cave 	Slight   	Slight   	Slight   	Slight   	Moderate:   small stone:   droughty
Redby	3	Severe:	Moderate:	Severe:	Moderate:	Moderate:	Moderate:
-	İ	wetness	wetness	wetness	wetness	frost action	wetness
	İ	cutbanks cave	İ	j	j	wetness	droughty
				!	!		
167B:			125-3	   <b>  1</b>	   <b>  1</b>		
Baudette	85	Severe:	Moderate:   shrink-swell	Moderate:	Moderate:   shrink-swell	Severe:	Slight
	 	cutbanks cave	snrink-swell	wetness	snrink-swell	frost action   low strength	1
	 					Iow screngen	
Spooner	10	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
	İ	wetness	wetness	wetness	wetness	frost action	wetness
		!	!	ļ	ļ	wetness	!
Moranville	   5	  Severe:	  Moderate:	  Moderate:	  Moderate:	  Severe:	  Moderate:
Moranville	<b>5</b>	severe:   cutbanks cave	shrink-swell	shrink-swell	shrink-swell	frost action	droughty
	 	Cutbanks cave	SHITHK-SWEIT	wetness	SHITHK-SWEIT	low strength	droughty
	! 	 		WCCIICDD		Ion belengen	
187:	İ		İ	j	j		j
Haug	90	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		ponding	ponding	ponding	ponding	frost action	excess humus
						ponding	ponding
Percy	   5	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
2	İ	wetness	wetness	wetness	wetness	frost action	wetness
	j		İ	j	j	wetness	j
				ļ	ļ		]
Cathro	3	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		excess humus	subsides	subsides	subsides	frost action	excess humus
	 	ponding	ponding	ponding	ponding	subsides	ponding
	 	 				ponding	
Boash	   2	  Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
	İ	wetness	shrink-swell	wetness	shrink-swell	low strength	wetness
	İ	İ	wetness	İ	wetness	shrink-swell	j
				!	!	wetness	!
101.	 	 					
191: Epoufette	   85	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
	05	wetness	wetness	wetness	wetness	frost action	wetness
	! 	cutbanks cave				wetness	droughty
	I I	Julianne Cave	1	1	1	1	aroagney

Table 19.--Building Site Development--Continued

Table 19.--Building Site Development--Continued

	Percent						
Map symbol and	of	Shallow	Dwellings	Dwellings	Small	Local roads	Lawns and
component name	map unit	excavations	without	with	commercial	and streets	landscaping
		<u> </u>	basements	basements	buildings		<u> </u>
191:		 					
Cormant	l   5	  Severe:	Severe:	  Severe:	  Severe:	  Severe:	  Severe:
		wetness	wetness	wetness	wetness	wetness	wetness
		cutbanks cave					
Leafriver	   5	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
Deallivel	, ,	ponding	ponding	ponding	ponding	frost action	excess humus
	l I	cutbanks cave	policing	policing	policing	ponding	ponding
	<u> </u>	cutbanks cave		I I		ponding	ponding
Meehan	5	Severe:	Severe:	Severe:	Severe:	Moderate:	Severe:
		wetness	wetness	wetness	wetness	frost action	too acid
		cutbanks cave				wetness	
202:							
Meehan	85	Severe:	Severe:	Severe:	Severe:	Moderate:	Severe:
		wetness	wetness	wetness	wetness	frost action	too acid
		cutbanks cave	İ	į	į	wetness	
Cormant	   8	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
		wetness	wetness	wetness	wetness	wetness	wetness
		cutbanks cave					
Wurtsmith	   5	  Severe:	  Slight	  Moderate:	  Slight	  Slight	  Moderate:
War cami cii	, ,	cutbanks cave	Diigiic	wetness	DIIGHE	Diigit	droughty
		Cutbanks cave		wechess			droughty
Leafriver	2	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		ponding	ponding	ponding	ponding	frost action	excess humus
		cutbanks cave				ponding	ponding
205:		 					
Karlstad	85	Severe:	Slight	Moderate:	Slight	Moderate:	Moderate:
		cutbanks cave		wetness		frost action	droughty
Sahkahtay	   7	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
	, 	wetness	wetness	wetness	wetness	wetness	wetness
		cutbanks cave					
Manageration	_				  Wadamata		
Marquette	5	Severe:	Slight	Slight	Moderate:	Slight	Severe:
		cutbanks cave			slope		droughty
Redby	2	Severe:	Moderate:	Severe:	Moderate:	Moderate:	Moderate:
		wetness	wetness	wetness	wetness	frost action	wetness
		cutbanks cave				wetness	droughty
Pits, gravel	   1	 					
<b>3</b>	_ 			i	i	i	

I	Percent						
Map symbol and	of	Shallow	Dwellings	Dwellings	Small	Local roads	Lawns and
component name	map unit	excavations	without   basements	with   basements	commercial buildings	and streets	landscaping
242B:							
Marquette	85	  Severe:	Slight	  Slight	  Moderate:	Slight	Severe:
		cutbanks cave			slope		droughty
Karlstad	14	  Severe:	Slight	Moderate:	  Slight	Moderate:	  Moderate:
		cutbanks cave		wetness		frost action	droughty
Pits, gravel	1						
280:		 					
Pelan	85	Severe:	Slight	Moderate:	Slight	Moderate:	Moderate:
		cutbanks cave		wetness		frost action	droughty
Strandquist	10	  Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		wetness	wetness	wetness	wetness	frost action   wetness	wetness
Garnes	3	  Moderate:	Slight	  Moderate:	  Slight	Severe:	Slight
		wetness		wetness	İ	frost action	İ
Marquette	1	  Severe:	Slight	  Slight	  Moderate:	Slight	Severe:
		cutbanks cave			slope		droughty
Pits, gravel	1						
379:		 					
Percy, very cobbly	90	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		wetness	wetness	wetness	wetness	frost action   wetness	wetness
Boash	3	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
İ		wetness	shrink-swell	wetness	shrink-swell	low strength	wetness
			wetness		wetness	shrink-swell   wetness	
Strandquist	3	  Severe:	Severe:	  Severe:	  Severe:	Severe:	  Severe:
		wetness	wetness	wetness	wetness	frost action wetness	wetness
   Haug	2	  Severe:		  Severe:	  Severe:	  Severe:	  Severe:
ļ		ponding	ponding	ponding	ponding	frost action ponding	excess humus
Skagen, very cobbly	2	  Moderate:	  Slight	Moderate:	  Slight	  Severe:	  Slight
i		wetness	T.	wetness	1	frost action	1

Table 19.--Building Site Development--Continued

Table 19.--Building Site Development--Continued

Man gambal and	Percent of	   Shallow			   Small	Local roads	Lawns and
Map symbol and		Shallow   excavations	Dwellings without	Dwellings with	Small   commercial	Local roads	
component name	map unit	excavations	basements	basements	buildings	and streets	landscaping
	<u> </u>	1	Dasements	Dasements	Durraings	1	1
383:		 					
Percy	90	  Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
-		wetness	wetness	wetness	wetness	frost action	wetness
	İ	İ	İ	İ	İ	wetness	İ
Boash	   3	  Severe:	  Severe:	  Severe:	  Severe:	Severe:	  Severe:
Boasii	3	wetness	shrink-swell	wetness	shrink-swell	low strength	wetness
	 	wechess	wetness	wechess	wetness	shrink-swell	wechess
		 	wechess		wethess	wetness	
			İ	İ			į
Strandquist	3	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
	 	wetness	wetness	wetness	wetness	frost action	wetness
	 	 				wetness	
Haug	2	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		ponding	ponding	ponding	ponding	frost action	excess humus
						ponding	ponding
Skagen	   2	  Moderate:	  Slight	  Moderate:	  Slight	  Severe:	  Slight
	- 	wetness		wetness		frost action	
	İ		İ	İ		İ	İ
384:							
Percy, depressional	85	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		ponding	ponding	ponding	ponding	frost action	ponding
	 	 				ponding	
Haug	   7	  Severe:	  Severe:	Severe:	Severe:	Severe:	  Severe:
_	İ	ponding	ponding	ponding	ponding	frost action	excess humus
						ponding	ponding
Percy	   5	  Severe:	  Severe:	  Severe:	  Severe:	Severe:	  Severe:
reicy	J	wetness	wetness	wetness	wetness	frost action	wetness
						wetness	
To a select							
Boash	3	Severe:   wetness	Severe:   shrink-swell	Severe:   wetness	Severe:   shrink-swell	Severe:   low strength	Severe:   wetness
	 	wethess	wetness	wechess	wetness	shrink-swell	wethess
		 	wechess		wethess	wetness	
					ļ		
387:	   <b>0</b> F	   Corromo	  Corromo /	Gorromo	Corromo	Corremo	  Corroms :
Roliss, depressional	85	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
	 	ponding	ponding	ponding	ponding	low strength	ponding
	 	 	1			ponding	
	I	I	1	1	T .	Ponding	1

	Percent	I	I				
Map symbol and	of	Shallow	Dwellings	Dwellings	Small	Local roads	Lawns and
component name	map unit	excavations	without	with	commercial	and streets	landscaping
		İ	basements	basements	buildings	<u> </u>	İ
387:   Haug	10	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
haug	10	ponding	ponding	ponding	ponding	frost action	excess humus
		policing		ponding	ponding	ponding	ponding
		į	į	į	į		
Roliss	5	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		wetness	wetness	wetness	wetness	frost action	wetness
						low strength	
		 				wetness	
404:		 					
Chilgren	85	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		wetness	wetness	wetness	wetness	frost action	wetness
						wetness	
Garnes	5	  Moderate:	Slight	  Moderate:	Slight	Severe:	  Slight
i		wetness	i	wetness		frost action	
	_						
Grygla	5	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		wetness	wetness	wetness	wetness	frost action	wetness
		cutbanks cave				wetness	
Haug	5	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		ponding	ponding	ponding	ponding	frost action	excess humus
						ponding	ponding
412:		 					
Mavie	85	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		wetness	wetness	wetness	wetness	frost action	wetness
		cutbanks cave			j	wetness	
Foxhome	5	  Severe:		Madamaka		  Severe:	
roxnome	5	severe:   cutbanks cave	Slight	Moderate:	Slight	frost action	Slight
		Cutbanks cave		wethess		ITOSC accion	
Northwood	5	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		ponding	ponding	ponding	ponding	frost action	excess humus
		cutbanks cave				ponding	ponding
Percy, very cobbly	5	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
-1,11		wetness	wetness	wetness	wetness	frost action	wetness
j						wetness	
422.							
432: Strandquist	85	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
		wetness	wetness	wetness	wetness	frost action	wetness
						wetness	

Table 19.--Building Site Development--Continued

Table 19.--Building Site Development--Continued

	Percent						ļ
Map symbol and	of	Shallow	Dwellings	Dwellings	Small	Local roads	Lawns and
component name	map unit	excavations	without basements	with   basements	commercial   buildings	and streets	landscaping
		<u> </u>	Dasements	Dasements	Durrarings	1	1
132:		 					
Percy, very cobbly	5	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
İ		wetness	wetness	wetness	wetness	frost action	wetness
Į.			!	]		wetness	
   Haug	4	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
	_	ponding	ponding	ponding	ponding	frost action	excess humus
						ponding	ponding
Boash	3	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
		wetness	shrink-swell	wetness	shrink-swell	low strength	wetness
į		İ	wetness	j	wetness	shrink-swell	İ
į					į	wetness	į
Foxhome	3	  Severe:	  Slight	  Moderate:	  Slight	  Severe:	  Slight
į		cutbanks cave		wetness		frost action	
Syrene, depressional	85	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
byrene, depressional	03	ponding	ponding	ponding	ponding	ponding	ponding
		cutbanks cave					
   Deerwood	5	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
i		ponding	ponding	ponding	ponding	ponding	excess humus
İ		cutbanks cave			į	į	ponding
Rosewood	5	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
i		wetness	wetness	wetness	wetness	wetness	wetness
		cutbanks cave					
  Syrene	5	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
i		wetness	wetness	wetness	wetness	wetness	wetness
		cutbanks cave					
!35 <b>:</b>		 					
Syrene	85	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
I		wetness	wetness	wetness	wetness	wetness	wetness
		cutbanks cave					
Rosewood	5	  Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		wetness	wetness	wetness	wetness	wetness	wetness
		cutbanks cave					
Syrene, depressional	5	  Severe:	Severe:	Severe:	Severe:	Severe:	  Severe:
-		ponding	ponding	ponding	ponding	ponding	ponding

	Percent						
Map symbol and	of	Shallow	Dwellings	Dwellings	Small	Local roads	Lawns and
component name	map unit	excavations	without	with	commercial	and streets	landscaping
		<u> </u>	basements	basements	buildings		1
135:		 					
Karlsruhe	3	Severe:	Moderate:	Severe:	Moderate:	Moderate:	Moderate:
		wetness	wetness	wetness	wetness	frost action	wetness
		cutbanks cave				wetness	droughty
Deerwood	2	  Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		ponding	ponding	ponding	ponding	ponding	excess humus
		cutbanks cave					ponding
139:		 					1
Strathcona	85	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		wetness	wetness	wetness	wetness	frost action	wetness
		cutbanks cave				wetness	
Northwood	5	  Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		ponding	ponding	ponding	ponding	frost action	excess humus
		cutbanks cave				ponding	ponding
Percy	5	  Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		wetness	wetness	wetness	wetness	frost action	wetness
						wetness	
Grimstad	3	  Severe:	Moderate:	Severe:	Moderate:	Moderate:	  Moderate:
		wetness	wetness	wetness	wetness	frost action	wetness
		cutbanks cave				wetness	
Strandquist	2	  Severe:	Severe:	  Severe:	Severe:	Severe:	Severe:
I		wetness	wetness	wetness	wetness	frost action	wetness
		 				wetness	
481:		 					
Kratka	85	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		wetness	wetness	wetness	wetness	wetness	wetness
		cutbanks cave		 			
Northwood	5	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		ponding	ponding	ponding	ponding	frost action	excess humus
		cutbanks cave				ponding	ponding
Percy	5	  Severe:	Severe:	  Severe:	Severe:	Severe:	Severe:
I		wetness	wetness	wetness	wetness	frost action	wetness
1		I.	I .	1	1	wetness	1

Table 19.--Building Site Development--Continued

Table 19.--Building Site Development--Continued

Ţ	Percent			1			
Map symbol and component name	of   map unit 	Shallow   excavations 	Dwellings without basements	Dwellings with basements	Small   commercial   buildings	Local roads and streets	Lawns and landscaping
481:		 	[ [				
Enstrom	3	Severe:   cutbanks cave	Slight   	Moderate:   shrink-swell   wetness	Slight	Moderate:   frost action	Moderate:   droughty
Strandquist	2	  Severe:   wetness 	  Severe:   wetness 	Severe:   wetness	Severe:   wetness	Severe:   frost action   wetness	  Severe:   wetness 
182:		 		I			
Grygla	85	Severe:   wetness   cutbanks cave	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   frost action   wetness	Severe:   wetness
Chilgren	5	  Severe:   wetness	  Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   frost action   wetness	
Grygla, depressional	5	  Severe:   ponding   cutbanks cave	  Severe:   ponding	Severe:   ponding	Severe:   ponding	Severe:   frost action   ponding	  Severe:   ponding
Enstrom	3	  Severe:   cutbanks cave	  Slight   	Moderate:   shrink-swell   wetness	  Slight 	Moderate:   frost action	Moderate:   droughty
Northwood	2	  Severe:   ponding   cutbanks cave	  Severe:   ponding 	Severe:   ponding	Severe:   ponding	Severe:   frost action   ponding	Severe:   excess humus   ponding
532:		 	 				
Sago	90	Severe:   ponding   cutbanks cave	Severe:   ponding 	Severe:   ponding	Severe:   ponding	Severe:   frost action   ponding	Severe:   excess humus   ponding
Cathro    	5	  Severe:   excess humus   ponding 	  Severe:   subsides   ponding 	Severe:   subsides   ponding	Severe:   subsides   ponding	Severe:   frost action   subsides   ponding	Severe:   excess humus   ponding
Zippel	5	  Severe:   wetness   cutbanks cave	  Severe:   wetness 	  Severe:   wetness		  Severe:   frost action   wetness	  Severe:   wetness 

	Percent						
Map symbol and component name	of map unit	Shallow excavations	Dwellings without	Dwellings with	Small commercial	Local roads	Lawns and landscaping
	<u> </u>	<u>İ</u>	basements	basements	buildings	<u> </u>	<u> </u>
534:	 						
Mooselake	90	Severe:	Severe:	  Severe:	  Severe:	Severe:	  Severe:
		excess humus	low strength	low strength	low strength	frost action	excess humus
	 	wetness	wetness	wetness	wetness	wetness	wetness
Bullwinkle	4	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		excess humus	low strength	wetness	low strength	frost action	excess humus
		wetness	wetness   subsides	subsides	wetness   subsides	wetness   subsides	wetness
			subsides		subsides	subsides	
Dora	3	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		excess humus	low strength	shrink-swell	low strength	frost action	excess humus
	 	ponding	subsides ponding	subsides ponding	subsides   ponding	subsides   ponding	ponding
Tawas	3	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
	İ	excess humus	low strength	wetness   subsides	low strength	frost action wetness	excess humus
		wetness   cutbanks cave	subsides	subsides	wetness   subsides	wetness   subsides	wetness
		İ	İ	j	j	j	j
540:							Severe:
Seelyeville	90 	Severe:   excess humus	Severe:	Severe:   low strength	Severe:	Severe:	severe:
	! 	ponding	subsides	subsides	subsides	subsides	ponding
			ponding	ponding	ponding	ponding	
Cathro	   4	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
		excess humus	subsides	subsides	subsides	frost action	excess humus
		ponding	ponding	ponding	ponding	subsides	ponding
	 	 				ponding	
Dora	3	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		excess humus	low strength	shrink-swell	low strength	frost action	excess humus
	 	ponding	subsides ponding	subsides ponding	subsides ponding	subsides ponding	ponding
	 		policing	ponding	policing	ponding	
Markey	3	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		excess humus	low strength	subsides	low strength	frost action	excess humus
		ponding cutbanks cave	subsides ponding	ponding	subsides   ponding	subsides   ponding	ponding
		į		į	į		į
541: Rifle	   90	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
V1116	30	excess humus	low strength	low strength	low strength	low strength	excess humus
		ponding	ponding	ponding	ponding	ponding	ponding
		İ	İ	İ	İ	İ	İ

Table 19.--Building Site Development--Continued

Table 19.--Building Site Development--Continued

	Percent	1					1
Map symbol and component name	of   map unit	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
541:		 					
Tacoosh	10	Severe:   excess humus   ponding	Severe:   low strength   ponding	Severe:   ponding	Severe:   low strength   ponding	Severe:   frost action   ponding	Severe:   excess humus   ponding
543:	 	 					
Markey	90	Severe:   excess humus   ponding   cutbanks cave	Severe:   low strength   subsides   ponding	Severe:   subsides   ponding	Severe:   low strength   subsides   ponding	Severe:   frost action   subsides   ponding	Severe:   excess humus   ponding
Cormant	5	  Severe:   wetness   cutbanks cave	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness
Seelyeville	5	  Severe:   excess humus   ponding	Severe:   low strength   subsides   ponding	Severe:   low strength   subsides   ponding	Severe:   low strength   subsides   ponding	Severe:   frost action   subsides   ponding	Severe:   excess humus   ponding
544:		 					
Cathro	90	Severe:   excess humus   ponding	Severe:   subsides   ponding	Severe:   subsides   ponding	Severe:   subsides   ponding	Severe:   frost action   subsides   ponding	Severe:   excess humus   ponding
Percy, very cobbly	<b>4</b>	  Severe:   wetness 	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   frost action   wetness	Severe:   wetness
Grygla	3	  Severe:   wetness   cutbanks cave	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   frost action   wetness	Severe:   wetness
Seelyeville	3	  Severe:   excess humus   ponding 	Severe:   low strength   subsides   ponding	Severe:   low strength   subsides   ponding	Severe:   low strength   subsides   ponding	Severe:   frost action   subsides   ponding	Severe:   excess humus   ponding
546: Lupton	90	  Severe:   excess humus   wetness	  Severe:   low strength   wetness   subsides	Severe:   low strength   wetness   subsides	Severe:  low strength  wetness  subsides	Severe:   frost action   wetness   subsides	Severe:   excess humus   wetness

	Percent						
Map symbol and	of	Shallow	Dwellings	Dwellings	Small	Local roads	Lawns and
component name	map unit	excavations	without	with	commercial	and streets	landscaping
			basements	basements	buildings		<u> </u>
i46:		 					
Bullwinkle	4	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		excess humus	low strength	wetness	low strength	frost action	excess humus
		wetness	wetness	subsides	wetness	wetness	wetness
			subsides		subsides	subsides	
Dora	3	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
		excess humus	low strength	shrink-swell	low strength	frost action	excess humus
		ponding	subsides	subsides	subsides	subsides	ponding
			ponding	ponding	ponding	ponding	
Tawas	3	  Severe:	Severe:	  Severe:	  Severe:	  Severe:	  Severe:
		excess humus	low strength	wetness	low strength	frost action	excess humus
		wetness	wetness	subsides	wetness	wetness	wetness
		cutbanks cave	subsides		subsides	subsides	
547:		 					
Deerwood	90	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		ponding	ponding	ponding	ponding	ponding	excess humus
		cutbanks cave					ponding
Markey	4	  Severe:	Severe:	Severe:	  Severe:	Severe:	Severe:
		excess humus	low strength	subsides	low strength	frost action	excess humus
		ponding	subsides	ponding	subsides	subsides	ponding
		cutbanks cave	ponding		ponding	ponding	
Rosewood	3	  Severe:	Severe:	Severe:	  Severe:	Severe:	Severe:
		wetness	wetness	wetness	wetness	wetness	wetness
		cutbanks cave					
Syrene	3	  Severe:	Severe:	Severe:	  Severe:	Severe:	Severe:
		wetness	wetness	wetness	wetness	wetness	wetness
		cutbanks cave					
550:							
Dora	90	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		excess humus	low strength	shrink-swell	low strength	frost action	excess humus
		ponding	subsides	subsides	subsides	subsides	ponding
		 	ponding	ponding	ponding	ponding	
Boash	4	  Severe:	Severe:	Severe:	  Severe:	Severe:	Severe:
		wetness	shrink-swell	wetness	shrink-swell	low strength	wetness
			wetness		wetness	shrink-swell	
		I .	i .	1	1	wetness	1

Table 19.--Building Site Development--Continued

Table 19.--Building Site Development--Continued

	Percent						
Map symbol and	of	Shallow	Dwellings	Dwellings	Small	Local roads	Lawns and
component name	map unit	excavations	without	with	commercial	and streets	landscaping
			basements	basements	buildings		
550 <b>:</b>							
Seelyeville	3	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
	-	excess humus	low strength	low strength	low strength	frost action	excess humus
i		ponding	subsides	subsides	subsides	subsides	ponding
			ponding	ponding	ponding	ponding	
Woodslake	3						
woodslake	3	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		ponding	shrink-swell	shrink-swell	shrink-swell	low strength	too clayey
			ponding	ponding	ponding	shrink-swell ponding	ponding
			į	į	į		į
561:   Bullwinkle	90	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
Bullwinkie	90	excess humus	low strength	wetness	low strength	frost action	excess humus
		excess numus   wetness	wetness	subsides	low strength	wetness	excess numus
		wethess		subsides			wetness
			subsides		subsides	subsides	
Lupton	4	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		excess humus	low strength	low strength	low strength	frost action	excess humus
		wetness	wetness	wetness	wetness	wetness	wetness
			subsides	subsides	subsides	subsides	į
Northwood, wooded	4	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
i		ponding	ponding	ponding	ponding	frost action	excess humus
		cutbanks cave				ponding	ponding
Chilgren	2	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
		wetness	wetness	wetness	wetness	frost action	wetness
			į	į	j	wetness	į
563 <b>:</b>		 	 				
Northwood	90	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
i		ponding	ponding	ponding	ponding	frost action	excess humus
		cutbanks cave	į	į	į	ponding	ponding
Grygla	4	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
19	-	wetness	wetness	wetness	wetness	frost action	wetness
		cutbanks cave				wetness	
Berner	3	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
Dermer	3	excess humus		subsides	low strength	frost action	excess humus
			low strength	!			!
		ponding cutbanks cave	subsides ponding	ponding	subsides ponding	subsides ponding	ponding

	Percent						
Map symbol and	of	Shallow	Dwellings	Dwellings	Small	Local roads	Lawns and
component name	map unit	excavations	without	with	commercial	and streets	landscaping
		1	basements	basements	buildings		1
563 <b>:</b>		 					
Strandquist	3	  Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		wetness	wetness	wetness	wetness	frost action	wetness
i		İ	İ	j	j	wetness	İ
5.65							
565:   Eckvoll	85	  Severe:	Slight	  Moderate:	  Slight	  Severe:	  Slight
HCRVOII	03	cutbanks cave		shrink-swell	bright	frost action	bright
		cacbamib cave		wetness	i		
i					İ		
Chilgren	5	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		wetness	wetness	wetness	wetness	frost action	wetness
						wetness	
Grygla	5	  Severe:		  Severe:	  Severe:	  Severe:	  Severe:
15		wetness	wetness	wetness	wetness	frost action	wetness
i		cutbanks cave	İ	j	j	wetness	j
Hiwood	5	  Severe:		  Moderate:		  Moderate:	125-1
H1WOOd	5	severe:   cutbanks cave	Slight	moderate:	Slight	frost action	Moderate:
		cutbanks cave		wetness		Frost action	droughty
568:							
Zippel	85	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
I		wetness	wetness	wetness	wetness	frost action	wetness
		cutbanks cave				wetness	
Augsburg, depressional	5	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
		ponding	ponding	shrink-swell	ponding	frost action	ponding
i		cutbanks cave		ponding		ponding	
_	_						
Sago	5	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		ponding cutbanks cave	ponding	ponding	ponding	frost action	excess humus
		cutbanks cave				ponding	ponding
Skime	5	Severe:	Slight	Moderate:	Slight	Moderate:	Moderate:
		cutbanks cave	!	wetness	Į	frost action	droughty
569:		 					
Wabanica	85	  Severe:	Severe:	  Severe:	  Severe:	  Severe:	  Severe:
		wetness	wetness	wetness	wetness	frost action	wetness
						wetness	
Warroad	6	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		wetness	wetness	wetness	wetness	frost action	wetness
		cutbanks cave		Į.		wetness	!

Table 19.--Building Site Development--Continued

Table 19.--Building Site Development--Continued

Map symbol and component name	Percent of map unit	   Shallow   excavations	Dwellings   without   basements	Dwellings with basements	Small   commercial   buildings	Local roads	Lawns and landscaping
569:	 	 	 				
Sax	<b>4</b>	Severe:   ponding 	Severe:   ponding 	Severe:   ponding	Severe:	Severe:   frost action   ponding	Severe:   excess humus   ponding
Grano	   3   	  Severe:   wetness   cutbanks cave	  Severe:   shrink-swell   wetness	Severe:   shrink-swell   wetness	Severe:   shrink-swell   wetness	Severe:   low strength   shrink-swell   wetness	Severe:   wetness 
Enstrom	   2   	  Severe:   cutbanks cave 	  Slight     	Moderate:   shrink-swell   wetness	Slight 	Moderate:   frost action	Moderate:   droughty 
570:	! 						
Faunce	85 	Severe:   cutbanks cave	Slight   	Slight 	Slight 	Slight 	Severe:   droughty
Clearriver	   <b>7</b> 	  Severe:   cutbanks cave	  Slight   	Moderate:   wetness	  Slight 	  Slight 	Severe:   droughty
Zimmerman	   <b>4</b> 	  Severe:   cutbanks cave	  Slight 	Slight	Slight	Slight	Moderate:   droughty
Meehan	   3   	  Severe:   wetness   cutbanks cave	  Severe:   wetness 	Severe:   wetness	Severe:   wetness	Moderate:   frost action   wetness	Severe:   too acid 
Pits, gravel	   1 	   	   				
581:	İ	İ	İ	İ	İ	Ì	j
Percy	90   	Severe:   wetness	Severe:   wetness 	Severe:   wetness	Severe:   wetness	Severe:   frost action   wetness	Severe: wetness
Haug	   5 	  Severe:   ponding	  Severe:   ponding	Severe:   ponding	Severe:   ponding	Severe:   frost action   ponding	Severe:   excess humus   ponding
Boash	   3   	  Severe:   wetness 	  Severe:   shrink-swell   wetness	Severe:   wetness	Severe:   shrink-swell   wetness	Severe:   low strength   shrink-swell   wetness	
Skagen	   2 	  Moderate:   wetness	  Slight 	Moderate:   wetness	  Slight 	  Severe:   frost action	Slight

	Percent	1	1	1	1	1	1
Map symbol and component name	of map unit	Shallow   excavations	Dwellings without basements	Dwellings with basements	Small   commercial   buildings	Local roads and streets	Lawns and landscaping
582:	 	 	1				
Roliss	85   	Severe:   wetness 	Severe:   wetness 	Severe:   wetness	Severe:   wetness 	Severe:   frost action   low strength   wetness	Severe:   wetness
Roliss, depressional	<b>7</b>	  Severe:   ponding 	Severe:   ponding 	Severe:   ponding	Severe:   ponding	Severe:   frost action   low strength   ponding	Severe:   ponding
Boash	   5   	  Severe:   wetness 	Severe:   shrink-swell   wetness	Severe:   wetness	Severe:   shrink-swell   wetness	Severe:   low strength   shrink-swell   wetness	Severe:   wetness
Haug	   3 	  Severe:   ponding 	Severe:   ponding	Severe:   ponding	Severe:   ponding	Severe:   frost action   ponding	Severe:   excess humus   ponding
583:	 	 					
Nereson	85 	Moderate:   wetness	Slight 	Moderate:   wetness	Slight	Severe:   frost action	Slight
Percy	10	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   frost action   wetness	Severe:   wetness
Pelan	   3 	  Severe:   cutbanks cave	  Slight 	  Moderate:   wetness	  Slight 	  Moderate:   frost action	  Moderate:   droughty
Foxhome	   2 	  Severe:   cutbanks cave	  Slight 	  Moderate:   wetness	  Slight 	  Severe:   frost action	  Slight 
627:	l I						
Tawas	   90   		Severe:   low strength   wetness   subsides	Severe:   wetness   subsides	Severe:   low strength   wetness   subsides	Severe:   frost action   wetness   subsides	Severe:   excess humus   wetness
Leafriver	   <b>4</b>   	  Severe:   ponding   cutbanks cave	  Severe:   ponding   	Severe:   ponding 	Severe:   ponding	Severe:   frost action   ponding	Severe:   excess humus   ponding

Table 19.--Building Site Development--Continued

Table 19.--Building Site Development--Continued

	Percent						
Map symbol and component name	of map unit	Shallow excavations	Dwellings without	Dwellings with	Small   commercial	Local roads and streets	Lawns and landscaping
			basements	basements	buildings	İ	İ
527 <b>:</b>			l I				
Lupton    	4	Severe:   excess humus   wetness	Severe:   low strength   wetness   subsides	Severe:   low strength   wetness   subsides	Severe:   low strength   wetness   subsides	Severe:   frost action   wetness   subsides	Severe:   excess humus   wetness
Cormant  	2	  Severe:   wetness   cutbanks cave	Severe:   wetness 	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness
630:							
Wildwood      	90	Severe:   ponding   	Severe:   shrink-swell   ponding 	Severe:   shrink-swell   ponding	Severe:   shrink-swell   ponding	Severe:   low strength   shrink-swell   ponding	Severe:   excess humus   ponding
Boash	4	Severe:   wetness 	Severe:   shrink-swell   wetness	Severe:   wetness	Severe:   shrink-swell   wetness	Severe:   low strength   shrink-swell   wetness	Severe:   wetness
Dora	4	Severe:   excess humus   ponding	Severe:   low strength   subsides   ponding	Severe:   shrink-swell   subsides   ponding	Severe:   low strength   subsides   ponding	Severe:   frost action   subsides   ponding	Severe:   excess humus   ponding
Espelie	2	  Severe:   wetness   cutbanks cave	Severe:   shrink-swell   wetness	Severe:   shrink-swell   wetness	Severe:   shrink-swell   wetness	Severe:   low strength   shrink-swell   wetness	Severe:   wetness
643:		 					
Huot	85	Severe:   cutbanks cave	Slight	Severe:   shrink-swell	Slight	Severe:   frost action	Moderate:
Thiefriver	12	  Severe:   wetness   cutbanks cave	  Severe:   wetness 	Severe:   shrink-swell   wetness	Severe:   wetness	Severe:   frost action   wetness	Severe:   wetness
Redby	3	  Severe:   wetness   cutbanks cave	  Moderate:   wetness 	Severe:   wetness	  Moderate:   wetness	Moderate:   frost action   wetness	Moderate:   wetness   droughty

	Percent						
Map symbol and	of	Shallow	Dwellings	Dwellings	Small	Local roads	Lawns and
component name	map unit	excavations	without	with	commercial	and streets	landscaping
		1	basements	basements	buildings	1	1
644:		 	l I				
Boash	85	  Severe:	Severe:	  Severe:	  Severe:	Severe:	Severe:
		wetness	shrink-swell	wetness	shrink-swell	low strength	wetness
i		<u>.</u> 	wetness	i	wetness	shrink-swell	İ
į			į	į	į	wetness	į
Percy	7	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
less	,	wetness	wetness	wetness	wetness	frost action	wetness
İ				Weeness	weeness	wetness	
Woodslake	5	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
woodstake	5	severe:   ponding	shrink-swell	shrink-swell	shrink-swell	low strength	1
		policing	ponding	ponding	ponding	shrink-swell	too clayey   ponding
		 	policing	ponding	ponding	ponding	
j		İ	İ	j	j	İ	
Strandquist	3	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		wetness	wetness	wetness	wetness	frost action	wetness
		 			l I	wetness	
645 <b>:</b>		 					
Espelie	85	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
İ		wetness	shrink-swell	shrink-swell	shrink-swell	low strength	wetness
		cutbanks cave	wetness	wetness	wetness	shrink-swell	
						wetness	
   Grano	5	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
i		wetness	shrink-swell	shrink-swell	shrink-swell	low strength	wetness
į		cutbanks cave	wetness	wetness	wetness	shrink-swell	j
į			İ	į	į	wetness	
Hilaire	5	  Severe:	  Slight	  Severe:	  Slight	  Severe:	  Moderate:
	, J	cutbanks cave	bright	shrink-swell	biight	frost action	droughty
Wildwood	5	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		ponding	shrink-swell	shrink-swell	shrink-swell	low strength	excess humus
			ponding	ponding	ponding	shrink-swell	ponding
						ponding	
651:		 	1				
Thiefriver	85	  Severe:	Severe:	  Severe:	  Severe:	  Severe:	Severe:
		wetness	wetness	shrink-swell	wetness	frost action	wetness
		cutbanks cave		wetness		wetness	
Grano	5	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
G1 ant0	. J	severe:   wetness	shrink-swell	shrink-swell	severe:	low strength	wetness
ļ		cutbanks cave	wetness	wetness	wetness	shrink-swell	"CCIIGBB
ļ						wetness	
		! 					

Table 19.--Building Site Development--Continued

Table 19.--Building Site Development--Continued

	Percent						
Map symbol and component name	of map unit	Shallow excavations	Dwellings   without	Dwellings with	Small   commercial	Local roads	Lawns and
			basements	basements	buildings		<u>i</u>
   51:							
Huot	5	Severe: cutbanks cave	Slight 	Severe:   shrink-swell	Slight	Severe:   frost action	Moderate:
Wildwood	5	Severe: ponding	Severe:   shrink-swell   ponding 	Severe:   shrink-swell   ponding	Severe:   shrink-swell   ponding	Severe:   low strength   shrink-swell   ponding	Severe:   excess humus   ponding 
08:			İ				i
Rushlake	85	Severe: cutbanks cave	Slight 	Moderate:   wetness	Slight 	Moderate:   frost action	Severe:   droughty
Corliss	6	  Severe:   cutbanks cave	  Slight 	Slight	Slight	Slight 	Severe:   droughty
Redby	5	Severe: wetness cutbanks cave	Moderate:   wetness	Severe:   wetness	Moderate:   wetness	Moderate:   frost action   wetness	Moderate: wetness droughty
Hangaard	3	Severe: wetness cutbanks cave	  Severe:   wetness 	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness   droughty
Pits, gravel	1						
712:			İ		İ	İ	İ
Rosewood	85	Severe: wetness cutbanks cave	Severe:   wetness	Severe:	Severe:	Severe:	Severe: wetness
Deerwood	6	Severe: ponding cutbanks cave	  Severe:   ponding	Severe:   ponding	Severe:   ponding	Severe:   ponding	Severe:   excess humus   ponding
Hangaard    	5	Severe: wetness cutbanks cave	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness   droughty
Ulen	4	Severe: cutbanks cave	  Slight 	Severe:   wetness	  Slight 	Moderate:   frost action	Moderate:   droughty
/21B:   Corliss	85	Severe:	    Slight	    Slight	    Slight	    Slight	    Severe:

Man numbel and	Percent of	Shallow	 	 	   Small	Local roads	Lawns and
Map symbol and component name	or map unit		Dwellings without basements	Dwellings with basements	small   commercial   buildings	and streets	Lawns and   landscaping
721B:		 					
Rushlake	10	Severe:   cutbanks cave	Slight 	Moderate:   wetness	Slight	Moderate:   frost action	Severe:   droughty
Hangaard	4	  Severe:   wetness   cutbanks cave	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness   droughty
Pits, gravel	1	 					
733:							
Berner	90	Severe:   excess humus   ponding   cutbanks cave	Severe:   low strength   subsides   ponding	Severe:   subsides   ponding	Severe:   low strength   subsides   ponding	Severe:   frost action   subsides   ponding	Severe:   excess humus   ponding
Grygla	5	Severe:   wetness   cutbanks cave	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   frost action   wetness	Severe:   wetness
Seelyeville	5	  Severe:   excess humus   ponding	Severe:   low strength   subsides   ponding	Severe:   low strength   subsides   ponding	Severe:   low strength   subsides   ponding	Severe:   frost action   subsides   ponding	Severe:   excess humus   ponding
737:		 					
Mahkonce	85	Moderate:   too clayey   wetness	Severe:   shrink-swell 	Moderate:   shrink-swell   wetness	Severe:   shrink-swell 	Severe:   frost action   low strength   shrink-swell	Slight     
Auganaush	10	  Severe:   wetness 	  Severe:   shrink-swell   wetness	Severe:   wetness	Severe:   shrink-swell   wetness	Severe:   low strength   shrink-swell   wetness	Severe:   wetness
Eckvoll	5	  Severe:   cutbanks cave	  Slight   	Moderate:   shrink-swell   wetness	Slight 	Severe:   frost action	Slight
755:							
Woodslake	85	Severe:   ponding 	Severe:   shrink-swell   ponding	Severe:   shrink-swell   ponding	Severe:   shrink-swell   ponding	Severe:   low strength   shrink-swell   ponding	Severe:   too clayey   ponding

Table 19.--Building Site Development--Continued

Table 19.--Building Site Development--Continued

	Percent		1		1		
Map symbol and component name	of map unit	Shallow   excavations	Dwellings without basements	Dwellings with basements	Small   commercial   buildings	Local roads and streets	Lawns and landscaping
755:	 	 					
Boash	   8   	Severe:   wetness 	Severe:   shrink-swell   wetness	Severe: wetness	Severe:   shrink-swell   wetness	Severe:   low strength   shrink-swell   wetness	Severe:   wetness
Wildwood	   5   	  Severe:   ponding   	Severe:   shrink-swell   ponding	Severe:   shrink-swell   ponding	Severe:   shrink-swell   ponding	Severe:   low strength   shrink-swell   ponding	Severe:   excess humus   ponding
Dora	2     	  Severe:   excess humus   ponding 	Severe:   low strength   subsides   ponding	Severe:   shrink-swell   subsides   ponding	Severe:   low strength   subsides   ponding	Severe:   frost action   subsides   ponding	Severe:   excess humus   ponding
767:	 	 					
Auganaush	90	Severe:   wetness 	Severe:   shrink-swell   wetness	Severe:   wetness	Severe:   shrink-swell   wetness	Severe: low strength shrink-swell wetness	Severe:   wetness
Mustinka	   5   	  Severe:   wetness 	  Severe:   wetness 	Severe:   wetness	Severe:   wetness	Severe:   frost action   low strength   wetness	Severe:   wetness
Wildwood	   3   	  Severe:   ponding   	  Severe:   shrink-swell   ponding	Severe:   shrink-swell   ponding	Severe:   shrink-swell   ponding	Severe:   low strength   shrink-swell   ponding	Severe:   excess humus   ponding
Mahkonce	   2   	  Moderate:   too clayey   wetness	  Severe:   shrink-swell 	Moderate:   shrink-swell   wetness	Severe:   shrink-swell	Severe:   frost action   low strength   shrink-swell	  Slight   
794:	 	 	1				
Clearriver	   85 	  Severe:   cutbanks cave	Slight 	Moderate:   wetness	Slight 	  Slight 	Severe:   droughty
Hiwood	   <b>7</b> 	  Severe:   cutbanks cave 	  Slight   	Moderate:   wetness	  Slight 	Moderate:   frost action	  Moderate:   droughty

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	Percent						
Map symbol and	of	Shallow	Dwellings	Dwellings	Small	Local roads	Lawns and
component name	map unit	excavations	without	with	commercial	and streets	landscaping
		<u> </u>	basements	basements	buildings		<u> </u>
/94:		 	l I				
Meehan	l 5	  Severe:	Severe:	Severe:	Severe:	Moderate:	Severe:
		wetness	wetness	wetness	wetness	frost action	too acid
İ		cutbanks cave	j			wetness	j
_							
Faunce	3	Severe:   cutbanks cave	Slight	Slight	Slight	Slight	Severe:
		cutbanks cave	 				droughty
.002:							
Fluvaquents, frequently							
flooded	90	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		ponding	flooding	flooding	flooding	flooding	flooding
		cutbanks cave	ponding	ponding	ponding	frost action	ponding
		  -	l I			ponding	
Seelyeville	6	  Severe:	Severe:	Severe:	Severe:	Severe:	  Severe:
_		excess humus	low strength	low strength	low strength	frost action	excess humus
		ponding	ponding	ponding	ponding	ponding	ponding
Hapludalfs	   2	  Severe:	  Severe:	  Severe:	  Severe:	Severe:	  Severe:
	_	slope	slope	slope	slope	frost action	slope
						low strength	
			İ		İ	slope	İ
Water	   2	 					
water	<u>4</u> 	 					
L030:			İ				
Pits, gravel	75						
Udipsamments	   20	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
		slope	slope	slope	slope	slope	slope
		cutbanks cave					
Corliss	   2	  Severe:	  Slight		  Slight		
Coriss	4	severe:   cutbanks cave	Slight	Slight	Slight	Slight	Severe:
		Cutbanks cave	 				droughty
Karlstad	2	Severe:	Slight	Moderate:	Slight	Moderate:	Moderate:
İ		cutbanks cave	İ	wetness		frost action	droughty
Hangaard		  Severe:	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
mangaarg	1	severe:	severe:	severe:	severe:	severe:	severe:
9							
		wetness   cutbanks cave	wetness	wetness	wetness	wetness	wetness   droughty

Table 19.--Building Site Development--Continued

Map symbol and	of						
		Shallow excavations	Dwellings without	Dwellings with	Small   commercial	Local roads	Lawns and
component name	map unit 	excavations	basements	basements	buildings	and streets	landscaping
1031:							-
				  Severe:			
Seelyeville, ponded	90	Severe:   excess humus	Severe:   low strength	severe:   low strength	Severe:   low strength	Severe:   frost action	Severe:   excess humus
l	 	ponding	ponding	ponding	ponding	ponding	ponding
!	 	ponding	ponding	ponurng	ponding	ponumg	ponding
Cathro	4	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
1		excess humus	subsides	subsides	subsides	frost action	excess humus
	 	ponding 	ponding	ponding	ponding	subsides ponding	ponding
Dora	   3	  Severe:	  Severe:	  Severe:	  Severe:	Severe:	  Severe:
2014	l J	excess humus	low strength	shrink-swell	low strength	frost action	excess humus
	i I	ponding	subsides	subsides	subsides	subsides	ponding
İ			ponding	ponding	ponding	ponding	
Markey	   3	  Severe:	  Severe:	  Severe:	  Severe:	Severe:	  Severe:
Markey	1	excess humus	low strength	subsides	low strength	frost action	excess humus
	 	ponding	subsides	ponding	subsides	subsides	ponding
;		cutbanks cave	ponding		ponding	ponding	
1067:	  -	1					
Fluvaquents, frequently	 	 					
flooded	l 60	  Severe:	Severe:	  Severe:	Severe:	  Severe:	Severe:
1100000	 	ponding	flooding	flooding	flooding	flooding	flooding
	İ	cutbanks cave	ponding	ponding	ponding	frost action	ponding
İ	İ	į				ponding	
Hapludalfs	   30	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
		slope	slope	slope	slope	frost action	slope
	İ	į	į -	i	i	low strength	i -
i		į	į		į	slope	İ
Seelyeville	   5	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
Beeryeville	5	excess humus	low strength	low strength	low strength	frost action	excess humus
l	 	ponding	ponding	ponding	ponding	ponding	ponding
!	 	ponding	ponding	ponuring	ponding	ponumg	ponding
Water	5						
1133B:	 						
Skime	85	Severe:	Slight	Moderate:	Slight	Moderate:	Moderate:
İ		cutbanks cave		wetness		frost action	droughty
Hiwood	   10	  Severe:	  Slight	  Moderate:	  Slight	Moderate:	  Moderate:
HIWOOd	1 10	cutbanks cave	pridur	wetness	priduc	frost action	droughty
	! 	Cacbanks cave		wecmess		IIOSC ACCION	droughty

	Percent						
Map symbol and	of	Shallow	Dwellings	Dwellings	Small	Local roads	Lawns and
component name	map unit	excavations	without	with	commercial	and streets	landscaping
			basements	basements	buildings		1
1133B:		 					
Zippel	5	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		wetness	wetness	wetness	wetness	frost action	wetness
		cutbanks cave				wetness	
1134:		 					
Borup	55	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		wetness	wetness	wetness	wetness	frost action	wetness
		cutbanks cave				wetness	
Glyndon	35	  Severe:	Slight	  Moderate:	  Slight	Severe:	  Slight
_		cutbanks cave		wetness		frost action	
Augsburg, depressional	5	  Severe:	Severe:	  Severe:	  Severe:	  Severe:	  Severe:
gg,g		ponding	ponding	shrink-swell	ponding	frost action	ponding
		cutbanks cave		ponding		ponding	
Skime	5	  Severe:	  Slight	  Moderate:	  Slight	  Moderate:	  Moderate:
		cutbanks cave		wetness		frost action	droughty
1144:		 					
Strathcona, depressional	45	  Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
· •		ponding	ponding	ponding	ponding	frost action	ponding
		cutbanks cave				ponding	
Kratka, depressional	45	  Severe:	Severe:	  Severe:	  Severe:	  Severe:	Severe:
_		ponding	ponding	ponding	ponding	ponding	ponding
		cutbanks cave		į		į	
Kratka	5	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
		wetness	wetness	wetness	wetness	wetness	wetness
		cutbanks cave		į		į	
Northwood	5	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
		ponding	ponding	ponding	ponding	frost action	excess humus
		cutbanks cave		į		ponding	ponding
1154:		 					
Sax	90	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		ponding	ponding	ponding	ponding	frost action	excess humus
				į		ponding	ponding
Wabanica	5	  Severe:	Severe:	  Severe:	  Severe:	  Severe:	Severe:
		wetness	wetness	wetness	wetness	frost action wetness	wetness

Table 19.--Building Site Development--Continued

Table 19.--Building Site Development--Continued

Dwellings without basements	Dwellings with basements     Severe:  subsides  ponding    Severe:  shrink-swell  ponding    Moderate:  wetness  Severe:  wetness	Small commercial buildings      Severe:   subsides   ponding     Severe:   shrink-swell   ponding     Slight     Severe:   wetness	Local roads   and streets	Lawns and landscaping
basements	basements	Severe:   subsides   ponding	Severe:   frost action   subsides   ponding     Severe:   low strength   shrink-swell   ponding       Severe:   frost action       Severe:	
subsides   ponding    Severe:   shrink-swell   ponding      Slight	subsides   ponding    Severe:   shrink-swell   ponding    Moderate:   wetness	subsides   ponding    Severe:   shrink-swell   ponding    Slight	frost action subsides ponding  Severe: low strength shrink-swell ponding  Severe: frost action Severe:	excess humus ponding Severe: too clayey ponding
subsides   ponding    Severe:   shrink-swell   ponding      Slight	subsides   ponding    Severe:   shrink-swell   ponding    Moderate:   wetness	subsides   ponding    Severe:   shrink-swell   ponding    Slight	frost action subsides ponding  Severe: low strength shrink-swell ponding  Severe: frost action Severe:	excess humus ponding Severe: too clayey ponding
ponding    Severe:   shrink-swell   ponding    Slight    Severe:	ponding 	ponding	subsides ponding  Severe: low strength shrink-swell ponding  Severe: frost action Severe:	excess humus ponding Severe: too clayey ponding
  Severe:   shrink-swell   ponding      Slight    Severe:	Severe:   shrink-swell   ponding		ponding     Severe:	    Severe:   too clayey   ponding   
shrink-swell   ponding	shrink-swell   ponding	shrink-swell   ponding	Severe:   low strength   shrink-swell   ponding	too clayey ponding
shrink-swell   ponding	shrink-swell   ponding	shrink-swell   ponding	low strength shrink-swell ponding  Severe: frost action  Severe:	too clayey ponding
ponding      Slight    Severe:	ponding      Moderate:   wetness    Severe:	ponding    Slight	shrink-swell   ponding    Severe:   frost action    Severe:	ponding   
    Severe:	wetness    Severe:	    Severe:	frost action    Severe:	  Slight 
    Severe:	wetness    Severe:	    Severe:	frost action    Severe:	Slight   
	  Severe:		  Severe:	
wetness	wetness	wetness	i -	Severe:
	,		frost action   wetness	wetness
  Slight	  Moderate:	  Slight	  Severe:	  Slight
	wetness		frost action	
Slight	Moderate:	Slight	Severe:	Slight
	wetness		frost action	
  Severe:	  Severe:	Severe:	Severe:	  Severe:
wetness	wetness	wetness	frost action   wetness	wetness
  Slight	  Moderate:	  Slight	  Severe:	  Slight
e	wetness		frost action	
Moderate:	Moderate:	Moderate:	Severe:	Moderate:
shrink-swell	shrink-swell wetness	shrink-swell	frost action low strength	droughty
1	Moderate	Moderate	Govern	  Slight
Modorato	wetness	shrink-swell		  arranc
  Moderate:   shrink-swell			low strength	
			Moderate	  Moderate:
	  Moderate:	Slight		droughty
		  Moderate:  Moderate:	Moderate:   Moderate:   Moderate:   Moderate:   Moderate:   Shrink-swell	Moderate:   Moderate:   Severe:

Map symbol and component name	Percent of map unit	Shallow   excavations 	Dwellings without basements	Dwellings with basements	Small   commercial   buildings	Local roads	Lawns an
1179B: Spooner	5	    Severe:   wetness	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness	  Severe:   frost action   wetness	  Severe:   wetness
1181: Rosewood	50	  Severe:   wetness   cutbanks cave	  Severe:   wetness	  Severe:   wetness	Severe:   wetness	  Severe:   wetness	  Severe:   wetness
Ulen	40	  Severe:   cutbanks cave	  Slight 	  Moderate:   wetness	  Slight 	  Moderate:   frost action	  Moderate:   droughty
Redby	5	  Severe:   wetness   cutbanks cave	  Moderate:   wetness	Severe:   wetness	Moderate:   wetness	  Moderate:   frost action   wetness	Moderate:   wetness   droughty
Deerwood	3	  Severe:   ponding   cutbanks cave	  Severe:   ponding	  Severe:   ponding	  Severe:   ponding	  Severe:   ponding	Severe:   excess hu   ponding
Syrene	2   	  Severe:   wetness   cutbanks cave	  Severe:   wetness	  Severe:   wetness		  Severe:   wetness	Severe:   wetness
1182: Warroad	85	    Severe:   wetness   cutbanks cave	  Severe:   wetness	  Severe:   wetness	Severe:   wetness	  Severe:   frost action   wetness	  Severe:   wetness
Wabanica	   7 	  Severe:   wetness 	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness	  Severe:   frost action   wetness	  Severe:   wetness
Enstrom	5 	  Severe:   cutbanks cave	  Slight   	  Moderate:   shrink-swell   wetness	  Slight 	  Moderate:   frost action 	  Moderate:   droughty
Sax	]   3 	  Severe:   ponding	  Severe:   ponding	  Severe:   ponding	  Severe:   ponding	  Severe:   frost action   ponding	  Severe:   excess hu   ponding

Table 19.--Building Site Development--Continued

Map symbol and	Percent of	   Shallow	Dwellings	Dwellings	Small	Local roads	Lawns and
component name	map unit	excavations	without	with	commercial	and streets	landscaping
Component name			basements	basements	buildings	and Beleeeb	
1187:	 	 					
Dora, ponded	90	  Severe:	Severe:	Severe:	Severe:	  Severe:	  Severe:
bora, ponded	1	excess humus	low strength	shrink-swell	low strength	frost action	excess humus
	   	ponding	ponding	ponding	ponding	ponding	ponding
Seelyeville, ponded	   4	  Severe:	Severe:	  Severe:	  Severe:	Severe:	  Severe:
		excess humus	low strength	low strength	low strength	frost action	excess humus
		ponding	ponding	ponding	ponding	ponding	ponding
Wildwood	   4	  Severe:	Severe:	  Severe:	Severe:	Severe:	  Severe:
		ponding	shrink-swell	shrink-swell	shrink-swell	low strength	excess humus
	 		ponding	ponding	ponding	shrink-swell   ponding	ponding
Boash	   2	  Severe:	Severe:	  Severe:	Severe:	Severe:	  Severe:
	İ	wetness	shrink-swell	wetness	shrink-swell	low strength	wetness
	 	 	wetness		wetness	shrink-swell   wetness	
1191:	 	 					
Sahkahtay	85	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
	   	wetness   cutbanks cave	wetness	wetness	wetness	wetness	wetness
Cormant	   5	  Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
	   	wetness cave	wetness	wetness	wetness	wetness	wetness
Deerwood	   5	  Severe:	Severe:	Severe:	Severe:	Severe:	  Severe:
	   	ponding cutbanks cave	ponding 	ponding	ponding	ponding	excess humus   ponding
Karlstad	   3	  Severe:	  Slight	  Moderate:	  Slight	Moderate:	  Moderate:
		cutbanks cave		wetness		frost action	droughty
Redby	   2	  Severe:	  Moderate:	  Severe:	Moderate:	Moderate:	  Moderate:
	ĺ	wetness	wetness	wetness	wetness	frost action	wetness
	į	cutbanks cave	į	į	į	wetness	droughty
.206:	 	[ 					
Cormant	55	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
	 	wetness cave	wetness	wetness	wetness	wetness	wetness
Redby	   35	  Severe:	  Moderate:	  Severe:	  Moderate:	  Moderate:	  Moderate:
	33	wetness	wetness	wetness	wetness	frost action	wetness
	I 	cutbanks cave	werness	werness	werness	wetness	droughty
	1	Cacbanas cave		1		1 42011688	aroughey

	Percent						
Map symbol and	of	Shallow	Dwellings	Dwellings	Small	Local roads	Lawns and
component name	map unit	excavations	without	with	commercial	and streets	landscapin
			basements	basements	buildings		
1206:				!	!		ļ
Hiwood	5	Severe:	Slight	Moderate:	Slight	Moderate:	Moderate:
		cutbanks cave		wetness		frost action	droughty
Leafriver	5	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
Lealilvei	5	ponding	ponding	ponding	ponding	frost action	excess humu
		cutbanks cave	ponding	ponding	ponding	ponding	ponding
		cacbanne cave				ponding	ponumy
1214:				i	i		i
Mustinka	90	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		wetness	wetness	wetness	wetness	frost action	wetness
		j	İ	j	j	low strength	j
						wetness	
Espelie	4	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		wetness	shrink-swell	shrink-swell	shrink-swell	low strength	wetness
		cutbanks cave	wetness	wetness	wetness	shrink-swell	
						wetness	
77/11 1	4	 			  Severe:		
Wildwood	4	Severe:	Severe:   shrink-swell	Severe:   shrink-swell	severe:   shrink-swell	Severe:   low strength	Severe:
		ponding	ponding	ponding	ponding	shrink-swell	ponding
		 	ponding	ponding	ponding	ponding	ponding
						ponding	
Dalbo	2	Moderate:	Severe:	Severe:	Severe:	Severe:	Slight
		too clayey	shrink-swell	shrink-swell	shrink-swell	low strength	j
		wetness				shrink-swell	
1274B:							
Redby	40	Severe:	Moderate:	Severe:	Moderate:	Moderate:	Moderate:
		wetness	wetness	wetness	wetness	frost action	wetness
		cutbanks cave				wetness	droughty
Hiwood	30	  Severe:	  Slight	  Moderate:	  Slight	  Moderate:	  Moderate:
HIWOOd	30	cutbanks cave	bilginc	wetness	BIIGHT	frost action	droughty
					Ì		
Leafriver, wooded	15	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
•		ponding	ponding	ponding	ponding	frost action	excess humu
		cutbanks cave		j		ponding	ponding
		ĺ		j	j	j	İ
Clearriver	5	Severe:	Slight	Moderate:	Slight	Slight	Severe:
		cutbanks cave		wetness			droughty
Cormant	5	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		wetness	wetness	wetness	wetness	wetness	wetness
		cutbanks cave					

Table 19.--Building Site Development--Continued

Table 19.--Building Site Development--Continued

	Percent						
Map symbol and component name	of map unit	Shallow   excavations	Dwellings without	Dwellings with	Small commercial	Local roads and streets	Lawns and landscaping
		excavacions	basements	basements	buildings	and streets	randscaping
1274B:		 					
Zimmerman	5	Severe:   cutbanks cave	Slight 	Slight	Slight	Slight	Moderate:
1298:		 					
Borup	90   	Severe:   wetness   cutbanks cave	Severe:   wetness 	Severe:   wetness	Severe:   wetness	Severe:   frost action   wetness	Severe:   wetness
Augsburg, depressional	3	Severe:   ponding   cutbanks cave	Severe:   ponding	Severe:   shrink-swell   ponding	Severe:   ponding	Severe:   frost action   ponding	Severe:   ponding
Glyndon	3	  Severe:   cutbanks cave	  Slight 	Moderate:   wetness	  Slight 	Severe:   frost action	  Slight 
Sago	2	  Severe:   ponding   cutbanks cave	Severe:   ponding	Severe:   ponding	Severe:   ponding	Severe:   frost action   ponding	Severe:   excess humus   ponding
Skime	2	  Severe:   cutbanks cave	  Slight 	Moderate:   wetness	  Slight 	Moderate:   frost action	  Moderate:   droughty
1302: Foldahl	85	    Severe:   cutbanks cave 	    Slight   	  Moderate:   shrink-swell   wetness	  Slight 	  Severe:   frost action	  Slight 
Kratka    	   10 	  Severe:   wetness   cutbanks cave	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness
Foxhome	5	  Severe:   cutbanks cave	  Slight 	Moderate:   wetness	  Slight 	  Severe:   frost action	  Slight 
1304:		 					
Glyndon	85	Severe:   cutbanks cave	Slight 	Moderate:   wetness	Slight	Severe:   frost action	Slight 
Borup	10	  Severe:   wetness   cutbanks cave	  Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   frost action   wetness	Severe:   wetness
Skime	5	  Severe:   cutbanks cave	  Slight 	  Moderate:   wetness	  Slight 	  Moderate:   frost action	  Moderate:   droughty

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	Percent						
Map symbol and component name	of map unit	Shallow excavations	Dwellings without	Dwellings with	Small commercial	Local roads and streets	Lawns and landscaping
•			basements	basements	buildings	İ	i
305:							
Hilaire	85	Severe:   cutbanks cave	Slight   	Severe:   shrink-swell	Slight 	Severe:   frost action	Moderate:   droughty
Espelie	11	Severe:   wetness   cutbanks cave	Severe:   shrink-swell   wetness	Severe:   shrink-swell   wetness	Severe:   shrink-swell   wetness	Severe: low strength shrink-swell wetness	Severe:   wetness
Grano	2	  Severe:   wetness   cutbanks cave	Severe:   shrink-swell   wetness	Severe:   shrink-swell   wetness	Severe:   shrink-swell   wetness	Severe:   low strength   shrink-swell   wetness	Severe:   wetness
Redby	2	  Severe:   wetness   cutbanks cave	  Moderate:   wetness 	Severe:   wetness	Moderate:   wetness	Moderate:   frost action   wetness	Moderate:   wetness   droughty
1314:			İ				
Tacoosh	90   	Severe:   excess humus   ponding	Severe:   low strength   ponding	Severe:   ponding 	Severe:   low strength   ponding	Severe:   frost action   ponding	Severe:   excess humus   ponding
Rifle	8	Severe:   excess humus   ponding	Severe:   low strength   ponding	Severe:   low strength   ponding	Severe:   low strength   ponding	Severe:   low strength   ponding	Severe:   excess humus   ponding
Sax	2	Severe:   ponding 	Severe:   ponding 	Severe:   ponding	Severe:   ponding	Severe:   frost action   ponding	Severe:   excess humus   ponding
316:			İ	j	İ		j
Wheatville	85 	Severe:   cutbanks cave 	Slight   	Severe:   shrink-swell	Slight   	Severe:   frost action	Slight   
Augsburg	13	  Severe:   wetness   cutbanks cave	Severe:   wetness 	Severe:   shrink-swell   wetness	Severe:   wetness	Severe:   frost action   wetness	Severe:   wetness
Grano	2	  Severe:   wetness   cutbanks cave	  Severe:   shrink-swell   wetness	Severe:   shrink-swell   wetness	Severe:   shrink-swell   wetness	Severe:   low strength   shrink-swell   wetness	Severe:   wetness

Table 19.--Building Site Development--Continued

	Percent						
Map symbol and	of	Shallow	Dwellings	Dwellings	Small	Local roads	Lawns and
component name	map unit	excavations	without basements	with   basements	commercial buildings	and streets	landscaping
1326:							-
Augsburg, depressional	45	  Severe:	Severe:	  Severe:	Severe:	Severe:	  Severe:
		ponding	ponding	shrink-swell	ponding	frost action	ponding
		cutbanks cave		ponding		ponding	
Wabanica, depressional	45	  Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		ponding	ponding	ponding	ponding	frost action	ponding
		 				low strength ponding	
  Sax	6	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
Jun		ponding	ponding	ponding	ponding	frost action	excess humus
						ponding	ponding
Espelie	2	  Severe:	Severe:	  Severe:	Severe:	Severe:	  Severe:
j		wetness	shrink-swell	shrink-swell	shrink-swell	low strength	wetness
		cutbanks cave	wetness	wetness	wetness	shrink-swell   wetness	
Zippel	2	  Severe:	Severe:	  Severe:	Severe:	Severe:	  Severe:
j		wetness	wetness	wetness	wetness	frost action	wetness
		cutbanks cave				wetness	
1327B:							İ
Karlstad	65	Severe:	Slight	Moderate:	Slight	Moderate:	Moderate:
		cutbanks cave		wetness		frost action	droughty
Marquette	25	Severe:	Slight	Slight	Moderate:	Slight	Severe:
		cutbanks cave			slope		droughty
Sahkahtay	7	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		wetness	wetness	wetness	wetness	wetness	wetness
		cutbanks cave					
Redby	3	Severe:	Moderate:	Severe:	Moderate:	Moderate:	Moderate:
		wetness	wetness	wetness	wetness	frost action	wetness
		cutbanks cave				wetness	droughty
1328:							İ
Northwood, wooded	90	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		ponding cutbanks cave	ponding 	ponding	ponding	frost action   ponding	excess humus
Berner, wooded	5	  Severe:	Severe:	  Severe:	Severe:	Severe:	  Severe:
j		excess humus	low strength	subsides	low strength	frost action	excess humus
ļ		ponding	subsides	ponding	subsides	subsides	ponding
		cutbanks cave	ponding	1	ponding	ponding	1

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	Percent						
Map symbol and component name	of map unit	Shallow   excavations	Dwellings without	Dwellings with	Small   commercial	Local roads and streets	Lawns and landscaping
		<u> </u>	basements	basements	buildings	<u> </u>	<u> </u>
1328:		 					
Grygla	5	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		wetness cave	wetness	wetness	wetness	frost action   wetness	wetness
.333:		 					
Dora, wooded	90	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		excess humus	low strength subsides	shrink-swell subsides	low strength subsides	frost action   subsides	excess humus
		ponding	ponding	ponding	ponding	ponding	ponding
Lupton	4	  Severe:	Severe:	  Severe:	  Severe:	  Severe:	  Severe:
		excess humus	low strength	low strength	low strength	frost action	excess humus
		wetness	wetness subsides	wetness   subsides	wetness   subsides	wetness   subsides	wetness
		 	subsides	subsides	subsides	subsides	
Wildwood	4	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		ponding	shrink-swell	shrink-swell	shrink-swell	low strength	excess humus
		 	ponding	ponding	ponding	shrink-swell ponding	ponding
Auganaush	2	  Severe:	Severe:	  Severe:	  Severe:	  Severe:	  Severe:
		wetness	shrink-swell	wetness	shrink-swell	low strength	wetness
	 	 	wetness		wetness	shrink-swell wetness	
1356:		 					
Water, miscellaneous.		  -	İ	į	İ	į	į
L399B:		 					
Two Inlets	85	Severe:	Slight	Slight	Slight	Slight	Moderate:
		cutbanks cave					small stones droughty
Wurtsmith	6	Severe:	Slight	Moderate:	Slight	Slight	Moderate:
		cutbanks cave		wetness			droughty
Zimmerman	6	Severe:	Slight	Slight	Slight	Slight	Moderate:
		cutbanks cave					droughty
Meehan	3	  Severe:	Severe:	Severe:	Severe:	Moderate:	Severe:
		wetness	wetness	wetness	wetness	frost action	too acid
		cutbanks cave				wetness	

Table 19.--Building Site Development--Continued

	Percent						
Map symbol and	of	Shallow	Dwellings	Dwellings	Small	Local roads	Lawns and
component name	map unit	excavations	without	with	commercial	and streets	landscaping
		<u> </u>	basements	basements	buildings	1	1
.401:		 					
Grygla, depressional	90	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		ponding	ponding	ponding	ponding	frost action	ponding
		cutbanks cave			į	ponding	
Northwood, wooded	5	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
i		ponding	ponding	ponding	ponding	frost action	excess humus
į		cutbanks cave				ponding	ponding
Chilgren	3	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
		wetness	wetness	wetness	wetness	frost action	wetness
į						wetness	
  Grygla	2	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:	  Severe:
13		wetness	wetness	wetness	wetness	frost action	wetness
į		cutbanks cave			į	wetness	
   L402:							
Leafriver, wooded	90	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		ponding	ponding	ponding	ponding	frost action	excess humus
ļ		cutbanks cave			İ	ponding	ponding
   Cormant	4	  Severe:	Severe:	  Severe:	  Severe:	Severe:	Severe:
		wetness	wetness	wetness	wetness	wetness	wetness
		cutbanks cave					
Tawas	4	  Severe:	Severe:	  Severe:	  Severe:	Severe:	Severe:
		excess humus	low strength	wetness	low strength	frost action	excess humus
		wetness	wetness	subsides	wetness	wetness	wetness
		cutbanks cave	subsides		subsides	subsides	
Redby	2	  Severe:	  Moderate:	  Severe:	  Moderate:	  Moderate:	  Moderate:
		wetness	wetness	wetness	wetness	frost action	wetness
		cutbanks cave				wetness	droughty
L404:		 					
Berner, wooded	90	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		excess humus	low strength	subsides	low strength	frost action	excess humus
		ponding	subsides	ponding	subsides	subsides	ponding
		cutbanks cave	ponding		ponding	ponding	
Lupton	4	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		excess humus	low strength	low strength	low strength	frost action	excess humus
		wetness	wetness	wetness	wetness	wetness	wetness
			subsides	subsides	subsides	subsides	

	Percent	<u> </u>			1	1	
Map symbol and component name	of map unit	Shallow   excavations	Dwellings   without	Dwellings   with	Small   commercial	Local roads	Lawns and
		<u> </u>	basements	basements	buildings	İ	İ
1404:		 					
Northwood, wooded	4	  Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		ponding cutbanks cave	ponding 	ponding	ponding	frost action   ponding	excess humus
Grygla	2	  Severe:	Severe:	  Severe:	Severe:	Severe:	Severe:
		wetness   cutbanks cave 	wetness	wetness   	wetness   	frost action   wetness	wetness 
1405:				j			
Lallie	90	Severe:   ponding   	Severe:   shrink-swell   ponding 	Severe:   shrink-swell   ponding 	Severe:   shrink-swell   ponding 	Severe:   low strength   shrink-swell   ponding	Severe:   excess salt   ponding 
Sax	7	Severe:   ponding	Severe:   ponding	Severe:   ponding	Severe:   ponding	Severe:   frost action   ponding	Severe:   excess humus   ponding
Wabanica	3	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness	  Severe:   frost action   wetness	  Severe:   wetness
1414:		 					
Nereson, very cobbly	85	Moderate:   wetness	Slight	Moderate:   wetness	Slight	Severe:   frost action	Slight
Percy, very cobbly	10	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   frost action   wetness	Severe:   wetness
Pelan	3	  Severe:   cutbanks cave	  Slight 	  Moderate:   wetness	  Slight 	  Moderate:   frost action	  Moderate:   droughty
Foxhome	2	  Severe:   cutbanks cave	  Slight 	Moderate:   wetness	Slight 	Severe:   frost action	Slight 
1428:			İ				
Karlsruhe	85	Severe:   wetness   cutbanks cave	Moderate:   wetness	Severe:   wetness	Moderate:   wetness	Moderate:   frost action   wetness	Moderate:   wetness   droughty
Syrene	10	  Severe:   wetness   cutbanks cave	Severe:   wetness	Severe:   wetness	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness

Table 19.--Building Site Development--Continued

Table 19.--Building Site Development--Continued

	Percent					ļ	
Map symbol and	of	Shallow	Dwellings	Dwellings	Small	Local roads	Lawns and
component name	map unit	excavations	without	with	commercial	and streets	landscaping
		<u> </u>	basements	basements	buildings	1	1
   1428:		 					
Ulen	5	  Severe:	Slight	Severe:	Slight	Moderate:	Moderate:
		cutbanks cave		wetness		frost action	droughty
 1444:		 					
Wurtsmith	85	Severe:	Slight	Moderate:	Slight	Slight	Moderate:
į		cutbanks cave		wetness			droughty
Meehan	10	  Severe:	Severe:	  Severe:	Severe:	Moderate:	  Severe:
į		wetness	wetness	wetness	wetness	frost action	too acid
į		cutbanks cave		į		wetness	į
Clearriver	2	  Severe:	  Slight	  Moderate:	  Slight	  Slight	  Severe:
į		cutbanks cave		wetness			droughty
Two Inlets	2	  Severe:	  Slight	  Slight	  Slight	  Slight	  Moderate:
į		cutbanks cave	i	i	i	i	small stones
				İ			droughty
   Cormant	1	  Severe:	  Severe:	  Severe:	  Severe:	Severe:	  Severe:
į		wetness	wetness	wetness	wetness	wetness	wetness
į		cutbanks cave		į			į
1448:		 					
Grano	90	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
		wetness	shrink-swell	shrink-swell	shrink-swell	low strength	too clayey
		cutbanks cave	wetness	wetness	wetness	shrink-swell	wetness
		 				wetness	
Percy	5	  Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
į		wetness	wetness	wetness	wetness	frost action	wetness
ļ		 		İ		wetness	İ
Augsburg	3	  Severe:	Severe:	  Severe:	Severe:	Severe:	Severe:
į		wetness	wetness	shrink-swell	wetness	frost action	wetness
		cutbanks cave		wetness		wetness	
Woodslake	2	  Severe:	Severe:	  Severe:	  Severe:	Severe:	  Severe:
İ		ponding	shrink-swell	shrink-swell	shrink-swell	low strength	too clayey
j			ponding	ponding	ponding	shrink-swell	ponding
						ponding	
1449:		 					
Grano	90	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
I		wetness	shrink-swell	shrink-swell	shrink-swell	low strength	wetness
		cutbanks cave	wetness	wetness	wetness	shrink-swell	
l l		•	1	'		wetness	

	Percent	1		1	1	1	1
Map symbol and component name	of map unit	Shallow   excavations	Dwellings without basements	Dwellings with basements	Small   commercial   buildings	Local roads	Lawns and landscaping
	<u> </u>	<u> </u>	Dasements	Dasements	Dullaings	<u> </u>	I
1449:		 					
Percy	5	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   frost action   wetness	Severe:   wetness
Augsburg	3	  Severe:   wetness   cutbanks cave	  Severe:   wetness	Severe:   shrink-swell   wetness	Severe:   wetness	Severe:   frost action   wetness	Severe:   wetness
Woodslake	2	  Severe:   ponding   	Severe:   shrink-swell   ponding	Severe:   shrink-swell   ponding	Severe:   shrink-swell   ponding	Severe:   low strength   shrink-swell   ponding	Severe:   too clayey   ponding
1807:		 					
Cathro, ponded	90	Severe:   excess humus   ponding	Severe:   ponding 	Severe:   ponding	Severe:   ponding	Severe:   frost action   ponding	Severe:   excess humus   ponding
Haug	4	  Severe:   ponding	Severe:   ponding	Severe:   ponding	Severe:   ponding	Severe:   frost action   ponding	Severe:   excess humus   ponding
Seelyeville, ponded	4	  Severe:   excess humus   ponding	  Severe:   low strength   ponding		Severe:   low strength   ponding	Severe:   frost action   ponding	Severe:   excess humus   ponding
Percy	2	  Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   frost action   wetness	Severe:   wetness
1808:	<u> </u>	 					
Markey, ponded	90	Severe:   excess humus   ponding   cutbanks cave	Severe:   low strength   subsides   ponding	Severe:   subsides   ponding	Severe:   low strength   subsides   ponding	Severe:   frost action   subsides   ponding	Severe:   excess humus   ponding
Leafriver	4   4 	  Severe:   ponding   cutbanks cave	  Severe:   ponding 	  Severe:   ponding	  Severe:   ponding	  Severe:   frost action   ponding	  Severe:   excess humus   ponding
Seelyeville, ponded	   4 	  Severe:   excess humus   ponding	  Severe:   low strength   ponding	  Severe:   low strength   ponding	  Severe:   low strength   ponding	  Severe:   frost action   ponding	  Severe:   excess humus   ponding

Table 19.--Building Site Development--Continued

Map symbol and component name	Percent of map unit	Shallow   excavations	Dwellings without basements	Dwellings with basements	Small   commercial   buildings	Local roads	Lawns and
1808: Cormant	     2	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness
	   	cutbanks cave	wethess	wethess	wechess	wechess	wechess
1918:	 	 		 	I I		
Croke	   85 	  Severe:   cutbanks cave	  Slight 	Severe:   shrink-swell	Slight	Severe:   frost action	Slight
Augsburg	   13 	Severe:   wetness   cutbanks cave	Severe:   wetness	Severe:   shrink-swell   wetness	Severe:   wetness	Severe:   frost action   wetness	Severe:   wetness
Grano	   2   	  Severe:   wetness   cutbanks cave	  Severe:   shrink-swell   wetness	Severe:   shrink-swell   wetness	Severe:   shrink-swell   wetness	Severe:   low strength   shrink-swell   wetness	Severe:   wetness
1923B:	 	 					
Garnes, very stony	85 	Moderate:   wetness	Slight 	Moderate:   wetness	Slight	Severe:   frost action	Slight
Chilgren	   10 	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   frost action   wetness	Severe:   wetness
Eckvoll	   3   	  Severe:   cutbanks cave 	  Slight     	Moderate:   shrink-swell   wetness	  Slight   	Severe:   frost action	  Slight   
Pelan	   2 	  Severe:   cutbanks cave	  Slight 	Moderate:   wetness	Slight	Moderate:   frost action	Moderate:   droughty
1984:							
Leafriver	90   	Severe:   ponding   cutbanks cave	Severe:   ponding 	Severe:   ponding 	Severe:   ponding	Severe:   frost action   ponding	Severe:   excess humus   ponding
Cormant	   5 	  Severe:   wetness   cutbanks cave	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness
Markey	   3   	  Severe:   excess humus   ponding   cutbanks cave	Severe:   low strength   subsides   ponding	Severe:   subsides   ponding	Severe:   low strength   subsides   ponding	Severe:   frost action   subsides   ponding	Severe:   excess humus   ponding

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	Percent						
Map symbol and	of	Shallow	Dwellings	Dwellings	Small	Local roads	Lawns and
component name	map unit	excavations	without	with	commercial	and streets	landscaping
			basements	basements	buildings		
1984:							
Redby	2	Severe:	Moderate:	Severe:	Moderate:	Moderate:	Moderate:
		wetness	wetness	wetness	wetness	frost action	wetness
		cutbanks cave				wetness	droughty
W:							
Water.							

## Table 20.--Sanitary Facilities

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. See text for definitions of terms used in this table. Absence of an entry indicates that no rating is applicable.)

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon   areas	Trench sanitary   landfill 	Area sanitary	Daily cover
7: Colvin	   85 	  Severe:   percs slowly   wetness	Severe:   wetness	  Severe:   wetness	  Severe:   wetness	  Poor:   wetness
Bearden	   5 	Severe:   percs slowly   wetness	Slight 	Severe:   wetness	  Severe:   wetness 	  Poor:   hard to pac! 
Grano	   5   	   Severe:   percs slowly   wetness	Slight 	  Severe:   too clayey   wetness	  Severe:   wetness 	Poor:   hard to pac!   too clayey   wetness
Sax	   5     	  Severe:   ponding 	Severe:   excess humus   seepage   ponding	  Severe:   ponding   	  Severe:   ponding   	  Poor:   ponding   
8B: Hiwood	   85   	  Severe:   wetness   poor filter	Severe:   seepage   wetness	  Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	  Poor:   seepage   too sandy
Redby	   7   	  Severe:   wetness   poor filter	Severe:   seepage   wetness	Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	  Poor:   seepage   too sandy
Clearriver	   3   	  Severe:   wetness   poor filter	Severe:   seepage   wetness	  Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	  Poor:   seepage   too sandy
Cormant	   3   	  Severe:   wetness   poor filter	Severe:   seepage   wetness	  Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	Poor:   seepage   too sandy   wetness
Zimmerman	   2 	  Severe:   poor filter 	Severe:   seepage	  Severe:   seepage   too sandy	  Severe:   seepage 	Poor:   seepage   too sandy
2: Augsburg	   85   	  Severe:   percs slowly   wetness	  Severe:   seepage	  Severe:   too clayey   wetness	  Severe:   seepage   wetness	  Poor:   hard to pac!   too clayey   wetness
Croke	   5 	Severe: percs slowly wetness	Severe:   seepage	  Severe:   too clayey   wetness	  Severe:   seepage   wetness	  Poor:   hard to pac!   too clayey
Grano	   5   	  Severe:   percs slowly   wetness	Slight	  Severe:   too clayey   wetness	  Severe:   wetness 	  Poor:   hard to pac!   too clayey   wetness

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank   absorption   fields	Sewage lagoon   areas	Trench sanitary	   Area sanitary   landfill 	Daily cover
		<u> </u>	Ì	<u> </u>	<u> </u>	Ì
52: Sago	5	  Severe:   ponding 	Severe:   excess humus   seepage   ponding	Severe:   too sandy   ponding	  Severe:   ponding 	  Poor:   too sandy   ponding
59:						
Grimstad	85	Severe:   wetness   poor filter	Severe:   seepage   wetness	Severe:   wetness	Severe:   seepage   wetness	Fair:   wetness 
Strathcona	12	  Severe:   percs slowly   wetness   poor filter	Severe:   seepage   wetness	  Severe:   wetness 	  Severe:   seepage   wetness	  Poor:   wetness 
Foxhome	3	  Severe:   wetness	Severe:   seepage   wetness	Severe:   wetness	  Severe:   seepage   wetness	  Fair:   too clayey   wetness
64:		 			 	
Ulen	85	Severe:   wetness   poor filter	Severe:   seepage   wetness	Severe:   too sandy   wetness	Severe:   seepage   wetness	Poor:   seepage   too sandy
Rosewood	10	  Severe:   wetness   poor filter 	Severe:   seepage   wetness	Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	Poor:   seepage   too sandy   wetness
Redby	3	Severe:   wetness   poor filter	Severe:   seepage   wetness	  Severe:   seepage   too sandy   wetness	Severe:   seepage   wetness	Poor:   seepage   too sandy
Rushlake	2	  Severe:   wetness   poor filter	Severe:   seepage   wetness	  Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	  Poor:   seepage   small stones   too sandy
65:					İ	
Foxhome	85	Severe:   wetness 	Severe:   seepage   wetness	Severe:   wetness 	Severe:   seepage   wetness	Fair:   too clayey   wetness
Strandquist	12	  Severe:   wetness	Severe:   seepage   wetness	Severe:   wetness	  Severe:   wetness 	Poor:   wetness
Skagen	3	  Severe:   wetness 	Severe:   seepage   wetness	Severe:   seepage   wetness	  Severe:   seepage   wetness	  Fair:   wetness 
67: Bearden	85	  Severe:   percs slowly   wetness	  slight 	  Severe:   wetness	  Severe:   wetness	  Poor:   hard to pack
Colvin	15	  Severe:   percs slowly   wetness	Severe:   wetness	  Severe:   wetness	  Severe:   wetness	  Poor:   wetness

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	   Sewage lagoon   areas	  Trench sanitary   landfill	   Area sanitary   landfill	Daily cover for landfill
			1	[		!
77:						
Garnes	85	Severe:   wetness 	Severe:   wetness	Severe:   wetness 	Severe:   wetness	Fair:   small stones   wetness
Chilgren	10	  Severe:   wetness	Severe:   wetness	Severe:   wetness	  Severe:   wetness	Poor:   wetness
Eckvoll	3		  Severe:   seepage   wetness	  Severe:   wetness 	  Severe:   seepage   wetness	  Fair:   too clayey   wetness 
Pelan	2	  Severe:   wetness   poor filter	Severe:   seepage   wetness	Severe:   wetness 	  Severe:   seepage   wetness	  Fair:   wetness 
111:			i	İ		
Hangaard	90	Severe:   wetness   poor filter	Severe:   seepage   wetness	Severe:   seepage   too sandy   wetness	Severe:   seepage   wetness	Poor:   seepage   too sandy   wetness
Deerwood	5	   Severe:   ponding   poor filter 	Severe:   excess humus   seepage   ponding	Severe:   seepage   too sandy   ponding	  Severe:   seepage   ponding 	Poor:   seepage   too sandy   ponding
Rushlake	3	Severe:   wetness   poor filter	Severe:   seepage   wetness	Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	Poor:   seepage   small stones   too sandy
Rosewood	2	  Severe:   wetness   poor filter	  Severe:   seepage   wetness	Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	Poor:   seepage   too sandy   wetness
116:		 			 	
Redby	85	  Severe:   wetness   poor filter 	Severe:   seepage   wetness	Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	Poor:   seepage   too sandy
Cormant	8	  Severe:   wetness   poor filter	Severe:   seepage   wetness	Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	Poor:   seepage   too sandy   wetness
Hiwood	6	  Severe:   wetness   poor filter	  Severe:   seepage   wetness	Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	Poor:   seepage   too sandy
Leafriver	1	  Severe:   ponding   poor filter 		  Severe:   seepage   too sandy   ponding	  Severe:   seepage   ponding	  Poor:   seepage   too sandy   ponding
117:			İ	į	İ	
Cormant	85	Severe:   wetness   poor filter	Severe:   seepage   wetness	Severe:   seepage   too sandy   wetness	Severe:   seepage   wetness	Poor:   seepage   too sandy   wetness

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon   areas	Trench sanitary	   Area sanitary   landfill	Daily cover
<u>_</u>	map anic		<u> </u>	<u> </u>	<u> </u> 	1
117: Leafriver	7	  Severe:   ponding   poor filter	Severe:   excess humus   seepage   ponding	Severe:   seepage   too sandy   ponding	Severe:   seepage   ponding	  Poor:   seepage   too sandy   ponding
Epoufette	3	  Severe:   wetness   poor filter 	Severe:   seepage   wetness	Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	  Poor:   seepage   small stones   too sandy
Redby	3	  Severe:   wetness   poor filter	Severe:   seepage   wetness	Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	  Poor:   seepage   too sandy
Grygla, depressional	2	Severe:   percs slowly   ponding   poor filter	Severe:   seepage   ponding	Severe:   ponding 	  Severe:   seepage   ponding	  Poor:   ponding   
133:		 			 	
Dalbo	85	Severe:   percs slowly   wetness	Severe:	Severe:   too clayey   wetness	Severe:   wetness	Poor:   hard to pack   too clayey
Mustinka	10	Severe:   percs slowly   wetness	Severe:   wetness	Severe:   wetness	  Severe:   wetness	Poor:   hard to pack   wetness
Moranville	5	  Severe:   percs slowly   wetness	Severe:   seepage   wetness	  Severe:   wetness	  Severe:   seepage   wetness	  Fair:   too clayey   wetness
145:		 			 	
Enstrom	85	Severe:   percs slowly   wetness   poor filter	Severe:   seepage   wetness	Severe:   wetness	  Severe:   seepage   wetness	  Fair:   too clayey   wetness
Grygla	10	Severe:   percs slowly   wetness   poor filter	Severe:   seepage   wetness	Severe:   wetness	  Severe:   seepage   wetness	Poor:  wetness
Redby	4	  Severe:   wetness   poor filter	Severe:   seepage   wetness	Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	  Poor:   seepage   too sandy
Pelan	1	  Severe:   wetness   poor filter	Severe:   seepage   wetness	  Severe:   wetness 	  Severe:   seepage   wetness	  Fair:   wetness 
147:			i		İ	i
Spooner	85	Severe:   wetness	Severe: seepage wetness	Severe:   wetness	Severe:   wetness	Poor:   wetness
Baudette	5	  Severe:   wetness	  Severe:   wetness	Severe:   wetness	  Severe:   wetness	  Fair:   wetness

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon   areas	Trench sanitary	Area sanitary	Daily cover
		ĺ	İ	İ		İ
147: Grygla	5   5	  Severe:   percs slowly   wetness   poor filter	Severe:   seepage   wetness	  Severe:   wetness 	  Severe:   seepage   wetness	  Poor:   wetness 
Sago	5   	  Severe:   ponding   	Severe:   excess humus   seepage   ponding	Severe:   too sandy   ponding	  Severe:   ponding 	Poor:   too sandy   ponding
L58B:		 			 	
Zimmerman	85	Severe:   poor filter 	Severe:   seepage	Severe:   seepage   too sandy	Severe:   seepage	Poor:   seepage   too sandy
Hiwood	6	  Severe:   wetness   poor filter 	Severe:   seepage   wetness	Severe:   seepage   too sandy   wetness	   Severe:   seepage   wetness	Poor:   seepage   too sandy
Two Inlets	6   	  Severe:   poor filter 	Severe:   seepage	  Severe:   seepage   too sandy	  Severe:   seepage 	Poor:   seepage   small stones   too sandy
Redby	3	  Severe:   wetness   poor filter 	Severe:   seepage   wetness	Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	Poor:   seepage   too sandy
L67B:		 			 	
Baudette	85	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Fair:   wetness
Spooner	   10 	  Severe:   wetness 	Severe:   seepage   wetness	  Severe:   wetness	  Severe:   wetness	  Poor:   wetness
Moranville	5	  Severe:   percs slowly   wetness	Severe:   seepage   wetness	  Severe:   wetness	Severe:   seepage   wetness	  Fair:   too clayey   wetness
187:		 			 	
Haug	90	Severe:   ponding 	Severe:   excess humus   seepage   ponding	Severe:   ponding 	Severe:   ponding 	Poor:   ponding 
Percy	   5 	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness	Poor:   wetness
Cathro	3   	  Severe:   percs slowly   ponding	Severe:   excess humus   seepage   ponding	  Severe:   ponding   	  Severe:   seepage   ponding	  Poor:   ponding   
Boash	2   2	  Severe:   percs slowly   wetness	  Moderate:   seepage	  Severe:   wetness 	  Severe:   wetness 	Poor:   wetness 

Table 20.--Sanitary Facilities--Continued

Map symbol and	Percent	   Septic tank	   Sewage lagoon	  Trench sanitary	Area sanitarv	Daily cover
component name	of map unit	absorption fields	areas	landfill	landfill	for landfill
191:		 				
Epoufette	85	  Severe:	Severe:	Severe:	  Severe:	Poor:
2		wetness	seepage	seepage	seepage	seepage
j		poor filter	wetness	too sandy	wetness	small stones
				wetness		too sandy
Cormant	5	  Severe:	Severe:	Severe:	  Severe:	Poor:
		wetness	seepage	seepage	seepage	seepage
		poor filter	wetness	too sandy	wetness	too sandy
		 		wetness	 	wetness
Leafriver	5	Severe:	Severe:	Severe:	Severe:	Poor:
		ponding	excess humus	seepage	seepage	seepage
		poor filter	seepage	too sandy	ponding	too sandy
		 	ponding	ponding	 	ponding
Meehan	5	Severe:	Severe:	Severe:	Severe:	Poor:
		wetness	seepage	seepage	seepage	seepage
		poor filter	wetness	too sandy wetness	wetness	too sandy wetness
202: Meehan	85	  Severe:	  Severe:	  Severe:	  Severe:	Poor:
meenan	05	wetness	seepage	seepage	seepage	seepage
		poor filter	wetness	too sandy	wetness	too sandy
				wetness	İ	wetness
Cormant	8	  Severe:	  Severe:	  Severe:	  Severe:	  Poor:
		wetness	seepage	seepage	seepage	seepage
		poor filter	wetness	too sandy	wetness	too sandy
		 		wetness	 	wetness
Wurtsmith	5	  Severe:	Severe:	Severe:	  Severe:	Poor:
		wetness	seepage	seepage	seepage	seepage
		poor filter		too sandy wetness	 	too sandy
		 		wechess	 	
Leafriver	2	Severe:	Severe:	Severe:	Severe:	Poor:
		ponding	excess humus	seepage	seepage	seepage
		poor filter 	seepage   ponding	too sandy ponding	ponding 	too sandy ponding
					ĺ	
205: Karlstad	85	  Severe:	  Severe:	  Severe:	  Severe:	  Poor:
		wetness	seepage	seepage	seepage	seepage
İ		poor filter	wetness	too sandy	wetness	small stones
		 		wetness	 	too sandy
Sahkahtay	7	  Severe:	Severe:	Severe:	  Severe:	Poor:
		wetness	seepage	seepage	seepage	seepage
		poor filter	wetness	too sandy	wetness	small stones
				wetness	 	too sandy
Marquette	5	Severe:	Severe:	Severe:	Severe:	Poor:
		poor filter	seepage	seepage	seepage	seepage   small stones
		 		too sandy	 	too sandy
_ "						į
Redby	2	Severe:	Severe:	Severe:	Severe:	Poor:
		wetness   poor filter	seepage   wetness	seepage too sandy	seepage wetness	seepage too sandy
				wetness		
Pits, gravel	1	 			 	
rics, graver		 			 	

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank   absorption   fields	Sewage lagoon   areas	Trench sanitary	Area sanitary	Daily cover
242B:   	85	    Severe:   poor filter	  Severe:   seepage	  Severe:   seepage	    Severe:   seepage	    Poor:   seepage
				too sandy		small stones   too sandy
	14	  Severe:   wetness   poor filter 	Severe:   seepage   wetness	Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	Poor:   seepage   small stones   too sandy
   Pits, gravel  	1	 			   	 
280:						i
Pelan	85	Severe:   wetness   poor filter	Severe:   seepage   wetness	Severe:   wetness	Severe:   seepage   wetness	Fair:   wetness
Strandquist    	10	  Severe:   wetness	Severe:   seepage   wetness	  Severe:   wetness	  Severe:   wetness	  Poor:   wetness
Garnes    	3	  Severe:   wetness 	Severe:   wetness	  Severe:   wetness	  Severe:   wetness 	  Fair:   small stones   wetness
Marquette	1	  Severe:   poor filter   	  Severe:   seepage	  Severe:   seepage   too sandy	  Severe:   seepage   	Poor:   seepage   small stones   too sandy
Pits, gravel	1					
 379:		 			 	
Percy, very cobbly	90	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Poor:
Boash	3	  Severe:   percs slowly   wetness	  Moderate:   seepage	  Severe:   wetness	  Severe:   wetness 	  Poor:   wetness 
Strandquist    	3	  Severe:   wetness	Severe:   seepage   wetness	  Severe:   wetness	  Severe:   wetness	  Poor:   wetness
	2	  Severe:   ponding 	Severe: excess humus seepage ponding	  Severe:   ponding 	  Severe:   ponding   	  Poor:   ponding   
Skagen, very cobbly	2	  Severe:   wetness	Severe:   seepage   wetness	  Severe:   seepage   wetness	  Severe:   seepage   wetness	  Fair:   wetness 
383:		! 			 	
Percy	90	  Severe:   wetness	Severe:   wetness	Severe:   wetness	  Severe:   wetness	Poor:   wetness
Boash	3	  Severe:   percs slowly   wetness	Moderate:   seepage	  Severe:   wetness	  Severe:   wetness	  Poor:   wetness

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon   areas	Trench sanitary	Area sanitary	Daily cover
	map unit	lifetas	I	1	l I	I
383: Strandquist	3	  Severe:   wetness	  Severe:   seepage   wetness	  Severe:   wetness	  Severe:   wetness	  Poor:   wetness
Haug	2	  Severe:   ponding 	  Severe:   excess humus   seepage   ponding	  Severe:   ponding   	  Severe:   ponding 	  Poor:   ponding 
Skagen	2	  Severe:   wetness	Severe:   seepage   wetness	Severe:   seepage   wetness	  Severe:   seepage   wetness	  Fair:   wetness 
384:		 			 	
Percy, depressional	85	Severe:   ponding	Severe:   ponding	Severe:   ponding	Severe:   ponding	Poor:
Haug	7	   Severe:   ponding   	Severe:   excess humus   seepage   ponding	Severe:   ponding 	   Severe:   ponding   	Poor:   ponding 
Percy	5	  Severe:   wetness	Severe:   wetness	Severe:   wetness	  Severe:   wetness	Poor:   wetness
Boash	3	Severe:   percs slowly   wetness	Moderate: seepage	Severe:   wetness	  Severe:   wetness	Poor:   wetness
387:		 			 	
Roliss, depressional	85	Severe:   percs slowly   ponding	Severe:   ponding	Severe:   ponding	Severe:   ponding	Poor:   ponding
Haug	10	  Severe:   ponding   	  Severe:   excess humus   seepage   ponding	  Severe:   ponding   	  Severe:   ponding   	  Poor:   ponding 
Roliss	5	  Severe:   percs slowly   wetness	Severe:   wetness	  Severe:   wetness	  Severe:   wetness	  Poor:   wetness
404:   Chilgren	85	    Severe:   wetness	  Severe:   wetness	  Severe:   wetness	    Severe:   wetness	  Poor:   wetness
Garnes	5	  Severe:   wetness	Severe:   wetness	  Severe:   wetness	  Severe:   wetness 	  Fair:   small stones   wetness
Grygla	5	  Severe:   percs slowly   wetness   poor filter	  Severe:   seepage   wetness	  Severe:   wetness 	  Severe:   seepage   wetness	  Poor:   wetness 
Haug	5	Severe:   ponding	  Severe:   excess humus   seepage   ponding	Severe:   ponding	Severe:   ponding	Poor: ponding

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank   absorption   fields	Sewage lagoon   areas	Trench sanitary	Area sanitary	Daily cove
12:   Mavie    	85	  Severe:   percs slowly   wetness   poor filter	Severe:   seepage   wetness	  Severe:   wetness 	  Severe:   seepage   wetness	  Poor:   wetness 
Foxhome	5	  Severe:   wetness	Severe:   seepage   wetness	  Severe:   wetness	  Severe:   seepage   wetness	  Fair:   too clayey   wetness
Northwood    	5	  Severe:   ponding 	Severe:   excess humus   seepage   ponding	  Severe:   ponding 	  Severe:   seepage   ponding	  Poor:   ponding 
Percy, very cobbly	5	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness	  Poor:   wetness
332: Strandquist	85	    Severe:   wetness 	Severe:   seepage   wetness	  Severe:   wetness	    Severe:   wetness 	  Poor:   wetness
Percy, very cobbly	5	  Severe:   wetness	Severe:   wetness	  Severe:   wetness	  Severe:   wetness	  Poor:   wetness
Haug	4	  Severe:   ponding   	Severe:   excess humus   seepage   ponding	  Severe:   ponding   	  Severe:   ponding   	  Poor:   ponding 
Boash	3	  Severe:   percs slowly   wetness	  Moderate:   seepage	  Severe:   wetness	  Severe:   wetness	  Poor:   wetness
Foxhome	3	  Severe:   wetness	Severe:   seepage   wetness	Severe:   wetness	  Severe:   seepage   wetness	  Fair:   too clayey   wetness
133:		 		1	 	1
Syrene, depressional	85	Severe:   ponding   poor filter	Severe:   seepage   ponding	Severe:   seepage   too sandy   ponding	Severe:   seepage   ponding	Poor:   seepage   too sandy   ponding
Deerwood	5	  Severe:   ponding   poor filter	Severe: excess humus seepage ponding	Severe:   seepage   too sandy   ponding	  Severe:   seepage   ponding	Poor:   seepage   too sandy   ponding
Rosewood	5	  Severe:   wetness   poor filter 	Severe:   seepage   wetness	Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	Poor:   seepage   too sandy   wetness
Syrene	5	  Severe:   wetness   poor filter	Severe:   seepage   wetness	  Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	  Poor:   seepage   too sandy   wetness

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon   areas	Trench sanitary   landfill	Area sanitary landfill	Daily cover
İ			İ	İ		İ
435:     Syrene    	85	  Severe:   wetness   poor filter	  Severe:   seepage   wetness	  Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	Poor:   seepage   too sandy   wetness
Rosewood      	5	  Severe:   wetness   poor filter	  Severe:   seepage   wetness	  Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	Poor:   seepage   too sandy   wetness
Syrene, depressional	5	  Severe:   ponding   poor filter	Severe:   seepage   ponding	Severe:   seepage   too sandy   ponding	  Severe:   seepage   ponding	Poor:   seepage   too sandy   ponding
Karlsruhe	3	  Severe:   wetness   poor filter	Severe:   seepage   wetness	Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	Poor:   seepage   too sandy
Deerwood    	2	  Severe:   ponding   poor filter 	Severe:   excess humus   seepage   ponding	  Severe:   seepage   too sandy   ponding	  Severe:   seepage   ponding	Poor:   seepage   too sandy   ponding
439:		İ	j	İ	İ	İ
Strathcona	85	Severe:   percs slowly   wetness   poor filter	Severe:   seepage   wetness	Severe:   wetness 	Severe:   seepage   wetness	Poor:   wetness 
Northwood	5	  Severe:   ponding 	Severe:   excess humus   seepage   ponding	  Severe:   ponding 	  Severe:   seepage   ponding	Poor:   ponding 
Percy	5	  Severe:   wetness	Severe:   wetness	  Severe:   wetness	  Severe:   wetness	Poor:   wetness
Grimstad	3	  Severe:   wetness   poor filter	Severe:   seepage   wetness	  Severe:   wetness 	  Severe:   seepage   wetness	  Fair:   wetness 
Strandquist    	2	Severe:   wetness	Severe:   seepage   wetness	Severe:   wetness	  Severe:   wetness	  Poor:   wetness 
481:		 			 	
Kratka	85	  Severe:   percs slowly   wetness   poor filter	Severe:   seepage   wetness	Severe:   wetness	  Severe:   seepage   wetness	Poor:   wetness 
Northwood	5	  Severe:   ponding   	  Severe:   excess humus   seepage   ponding	  Severe:   ponding 	  Severe:   seepage   ponding	  Poor:   ponding 
   Percy  	5	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness	  Poor:   wetness

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon   areas	Trench sanitary	Area sanitary	Daily cover
481: Enstrom	3	  Severe:   percs slowly   wetness   poor filter	  Severe:   seepage   wetness	  Severe:   wetness	  Severe:   seepage   wetness	  Fair:   too clayey   wetness
Strandquist	2	  Severe:   wetness	Severe:   seepage   wetness	  Severe:   wetness 	  Severe:   wetness 	  Poor:   wetness 
482: Grygla	85	Severe:   percs slowly   wetness   poor filter	  Severe:   seepage   wetness	  Severe:   wetness 	  Severe:   seepage   wetness	  Poor:   wetness
Chilgren	5	  Severe:   wetness	Severe:   wetness	Severe:   wetness	  Severe:   wetness	Poor:   wetness
Grygla, depressional	5	  Severe:   percs slowly   ponding   poor filter	Severe:   seepage   ponding	  Severe:   ponding 	  Severe:   seepage   ponding	  Poor:   ponding   
Enstrom	3	Severe:   percs slowly   wetness   poor filter	Severe:   seepage   wetness	Severe:   wetness	  Severe:   seepage   wetness	Fair:   too clayey   wetness
Northwood	2	  Severe:   ponding 	Severe:   excess humus   seepage   ponding	  Severe:   ponding 	  Severe:   seepage   ponding	  Poor:   ponding 
532:     Sago  	90	  Severe:   ponding   	  Severe:   excess humus   seepage   ponding	  Severe:   too sandy   ponding	  Severe:   ponding   	  Poor:   too sandy   ponding
   Cathro      	5	  Severe:   percs slowly   ponding	  Severe:   excess humus   seepage   ponding	  Severe:   ponding 	  Severe:   seepage   ponding	  Poor:   ponding   
Zippel	5	  Severe:   wetness 	Severe:   seepage   wetness	Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	Poor:   wetness   
534: Mooselake	90	  Severe:   wetness	  Severe:   excess humus   seepage   wetness	Severe:   excess humus   seepage   wetness	  Severe:   seepage   wetness	  Poor:   excess humus   wetness
Bullwinkle	4	  Severe:   percs slowly   wetness	Severe:   excess humus   seepage   wetness		  Severe:   seepage   wetness	Poor:   excess humus   wetness

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of	Septic tank absorption	Sewage lagoon   areas	Trench sanitary	Area sanitary	Daily cover
	map unit	fields	1	<u> </u>	<u> </u>	<u> </u>
534:		 			 	
Dora	3	Severe:	Severe:	Severe:	  Severe:	Poor:
i		percs slowly	excess humus	too clayey	seepage	hard to pack
		subsides	seepage	ponding	ponding	too clayey
		ponding	ponding			ponding
Tawas	3	  Severe:	  Severe:	Severe:	  Severe:	  Poor:
i		percs slowly	excess humus	seepage	seepage	seepage
I		wetness	seepage	too sandy	wetness	too sandy
		subsides	wetness	wetness		wetness
5 <b>40:</b>		 			 	
Seelyeville	90	Severe:	Severe:	Severe:	Severe:	Poor:
I		percs slowly	excess humus	excess humus	seepage	excess humus
		subsides	seepage	seepage	ponding	ponding
		ponding	ponding	ponding	l I	
Cathro	4	Severe:	Severe:	Severe:	  Severe:	Poor:
İ		percs slowly	excess humus	ponding	seepage	ponding
		ponding	seepage		ponding	
		 	ponding		 	
Dora	3	  Severe:	Severe:	Severe:	  Severe:	  Poor:
i		percs slowly	excess humus	too clayey	seepage	hard to pack
I		subsides	seepage	ponding	ponding	too clayey
		ponding	ponding			ponding
Markey	3	  Severe:	  Severe:	Severe:	  Severe:	  Poor:
·		percs slowly	excess humus	seepage	seepage	seepage
		subsides	seepage	too sandy	ponding	too sandy
		ponding	ponding	ponding		ponding
5 <b>41:</b>		 			 	
Rifle	90	Severe:	Severe:	Severe:	Severe:	Poor:
İ		ponding	excess humus	excess humus	seepage	excess humus
			seepage	seepage	ponding	ponding
		l I	ponding	ponding	l I	
Tacoosh	10	Severe:	Severe:	Severe:	  Severe:	Poor:
İ		percs slowly	excess humus	excess humus	seepage	excess humus
		ponding	seepage	ponding	ponding	ponding
		 	ponding		 	
543:		 			! 	
Markey	90	Severe:	Severe:	Severe:	Severe:	Poor:
		percs slowly	excess humus	seepage	seepage	seepage
		subsides	seepage	too sandy	ponding	too sandy
		ponding	ponding	ponding	 	ponding
Cormant	5	  Severe:	Severe:	Severe:	  Severe:	Poor:
İ		wetness	seepage	seepage	seepage	seepage
		poor filter	wetness	too sandy	wetness	too sandy
		 		wetness	 	wetness
Seelyeville	5	  Severe:	Severe:	Severe:	  Severe:	Poor:
- i		percs slowly	excess humus	excess humus	seepage	excess humus
j		subsides	seepage	seepage	ponding	ponding
		ponding	ponding	ponding	I	

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon   areas	Trench sanitary	Area sanitary	Daily cover
				!	ļ.	!
544: Cathro    	90	   Severe:   percs slowly   ponding	Severe:   excess humus   seepage   ponding	  Severe:   ponding   	  Severe:   seepage   ponding	  Poor:   ponding   
Percy, very cobbly	4	Severe:   wetness	Severe:   wetness	Severe:   wetness	  Severe:   wetness	Poor:
Grygla	3	Severe:   percs slowly   wetness   poor filter	Severe:   seepage   wetness	  Severe:   wetness 	  Severe:   seepage   wetness	  Poor:   wetness 
Seelyeville	3	Severe:   percs slowly   subsides   ponding	Severe:   excess humus   seepage   ponding		  Severe:   seepage   ponding 	  Poor:   excess humus   ponding 
546:						İ
Lupton    	90	Severe: percs slowly wetness subsides	Severe:   excess humus   seepage   wetness	Severe:   excess humus   seepage   wetness	Severe:   seepage   wetness	Poor:   excess humus   wetness
Bullwinkle	4	  Severe:   percs slowly   wetness	Severe:   excess humus   seepage   wetness	Severe:   excess humus   wetness	  Severe:   seepage   wetness	Poor:   excess humus   wetness
Dora	3	Severe:   percs slowly   subsides   ponding	Severe:   excess humus   seepage   ponding	  Severe:   too clayey   ponding	  Severe:   seepage   ponding	Poor:   hard to pack   too clayey   ponding
Tawas	3	Severe:   percs slowly   wetness   subsides	Severe:   excess humus   seepage   wetness	Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	Poor:   seepage   too sandy   wetness
547:		 			 	
Deerwood	90	Severe:   ponding   poor filter	Severe:   excess humus   seepage   ponding	Severe:   seepage   too sandy   ponding	  Severe:   seepage   ponding	Poor:   seepage   too sandy   ponding
Markey	4	Severe:   percs slowly   subsides   ponding	Severe:   excess humus   seepage   ponding	Severe:   seepage   too sandy   ponding	  Severe:   seepage   ponding	Poor:   seepage   too sandy   ponding
Rosewood	3	  Severe:   wetness   poor filter	Severe:   seepage   wetness		  Severe:   seepage   wetness	Poor:   seepage   too sandy   wetness
Syrene	3	Severe:   wetness   poor filter	Severe:   seepage   wetness	Severe:   seepage   too sandy   wetness	Severe:   seepage   wetness	Poor:   seepage   too sandy   wetness

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon   areas	Trench sanitary	Area sanitary	Daily cover for landfill
550:  Dora	90	  Severe:   percs slowly   subsides   ponding	  Severe:   excess humus   seepage   ponding	  Severe:   too clayey   ponding	  Severe:   seepage   ponding	  Poor:   hard to pack   too clayey   ponding
Boash	4	  Severe:   percs slowly   wetness	Moderate:   seepage	  Severe:   wetness	  Severe:   wetness 	  Poor:   wetness
Seelyeville	3	Severe:   percs slowly   subsides   ponding	Severe:   excess humus   seepage   ponding	Severe:   excess humus   seepage   ponding	  Severe:   seepage   ponding	  Poor:   excess humus   ponding
Woodslake	3	   Severe:   percs slowly   ponding	Severe:   ponding 	Severe:   too clayey   ponding	  Severe:   ponding   	Poor:   hard to pack   too clayey   ponding
561:			i		İ	
Bullwinkle	90	Severe:   percs slowly   wetness	Severe:   excess humus   seepage   wetness	Severe:   excess humus   wetness	Severe:   seepage   wetness	Poor:   excess humus   wetness 
Lupton	4	Severe:   percs slowly   wetness   subsides	Severe:   excess humus   seepage   wetness	Severe:   excess humus   seepage   wetness	Severe:   seepage   wetness	Poor:   excess humus   wetness
Northwood, wooded	4	  Severe:   ponding 	Severe:   excess humus   seepage   ponding	Severe:   ponding	  Severe:   seepage   ponding	  Poor:   ponding   
Chilgren	2	  Severe:   wetness	Severe:   wetness	  Severe:   wetness	  Severe:   wetness 	Poor:   wetness
563:					İ	
Northwood	90	Severe:   ponding 	Severe:   excess humus   seepage   ponding	Severe:   ponding 	Severe:   seepage   ponding	Poor:   ponding 
Grygla	4	Severe:   percs slowly   wetness   poor filter	Severe:   seepage   wetness	Severe:   wetness	Severe:   seepage   wetness	Poor:   wetness
Berner	3	Severe:   percs slowly   ponding   poor filter	Severe:   excess humus   seepage   ponding	Severe:   excess humus   ponding	  Severe:   seepage   ponding	Poor:   excess humus   ponding
Strandquist	3	  Severe:   wetness	Severe:   seepage   wetness	  Severe:   wetness 	  Severe:   wetness 	  Poor:   wetness
565: Eckvoll	85	Severe:   percs slowly   wetness   poor filter	  Severe:   seepage   wetness	  Severe:   wetness 	  Severe:   seepage   wetness 	  Fair:   too clayey   wetness 

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon   areas	Trench sanitary	Area sanitary	Daily cover
I			1		[	
565:   Chilgren  	5	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness	Poor:   wetness
Grygla	5	Severe:   percs slowly   wetness   poor filter	Severe:   seepage   wetness	Severe:   wetness	  Severe:   seepage   wetness	Poor:  wetness
Hiwood	5	  Severe:   wetness   poor filter 	Severe:   seepage   wetness	Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	Poor:   seepage   too sandy
568: Zippel	85	  Severe:   wetness	  Severe:   seepage   wetness	  Severe:   seepage   too sandy	  Severe:   seepage   wetness	  Poor:   wetness
		İ	į	wetness	į	į
Augsburg, depressional-	5	  Severe:   percs slowly   ponding	Severe:   seepage   ponding	Severe:   too clayey   ponding	  Severe:   seepage   ponding	Poor:   hard to pack   too clayey   ponding
Sago	5	  Severe:   ponding   	Severe:   excess humus   seepage   ponding	Severe:   too sandy   ponding	  Severe:   ponding   	Poor:   too sandy   ponding
Skime	5	  Severe:   wetness   poor filter	Severe:   seepage   wetness	Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	Poor:   seepage   too sandy
569:		 			 	
Wabanica	85	  Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Poor:   wetness
Warroad	6	  Severe:   percs slowly   wetness   poor filter	Severe:   seepage   wetness	Severe:   wetness	  Severe:   seepage   wetness	Poor:  wetness
Sax	4	  Severe:   ponding   	Severe:   excess humus   seepage   ponding	  Severe:   ponding 	  Severe:   ponding   	  Poor:   ponding 
Grano	3	  Severe:   percs slowly   wetness 	slight     	Severe:   too clayey   wetness	  Severe:   wetness   	  Poor:   hard to pack   too clayey   wetness
Enstrom	2	  Severe:   percs slowly   wetness   poor filter	  Severe:   seepage   wetness	  Severe:   wetness	  Severe:   seepage   wetness	  Fair:   too clayey   wetness

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of	Septic tank   absorption	Sewage lagoon   areas	Trench sanitary	Area sanitary	Daily cover
	map unit	fields	1	<u> </u>	<u> </u>	<u> </u>
570:   Faunce	85	  Severe:   poor filter 	  Severe:   seepage 	  Severe:   seepage   too sandy	  Severe:   seepage 	  Poor:   seepage   small stones   too sandy
Clearriver	7   7	  Severe:   wetness   poor filter	Severe:   seepage   wetness	  Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	Poor:   seepage   too sandy
Zimmerman	   4 	  Severe:   poor filter 	  Severe:   seepage	  Severe:   seepage   too sandy	  Severe:   seepage	  Poor:   seepage   too sandy
Meehan    	3   	  Severe:   wetness   poor filter	  Severe:   seepage   wetness	  Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	Poor:   seepage   too sandy   wetness
Pits, gravel	1	   		 	   	 
581:		İ			İ	
Percy	90	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Poor:
Haug	5	  Severe:   ponding   	Severe:   excess humus   seepage   ponding	Severe:   ponding 	  Severe:   ponding   	Poor:   ponding 
Boash	3	  Severe:   percs slowly   wetness	  Moderate:   seepage	  Severe:   wetness	  Severe:   wetness	  Poor:   wetness
Skagen	2	  Severe:   wetness	Severe:   seepage   wetness	  Severe:   seepage   wetness	  Severe:   seepage   wetness	  Fair:   wetness
582:		l I			l I	
582: Roliss	85 	  Severe:   percs slowly   wetness	Severe:   wetness	Severe:   wetness	  Severe:   wetness	Poor:   wetness
Roliss, depressional	7	  Severe:   percs slowly   ponding	Severe:   ponding	  Severe:   ponding	  Severe:   ponding	  Poor:   ponding
Boash	5	  Severe:   percs slowly   wetness	Moderate:   seepage	  Severe:   wetness	  Severe:   wetness	  Poor:   wetness
Haug	3	  Severe:   ponding 	Severe:   excess humus   seepage   ponding	  Severe:   ponding 	  Severe:   ponding 	  Poor:   ponding 
583:     Nereson	     85	    Severe:	    Severe:	    Severe:	    Severe:	    Fair:
		wetness	seepage   wetness	seepage   wetness	seepage wetness	small stones

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon   areas	Trench sanitary   landfill	Area sanitary	Daily cover   for landfill
	map unit	lieius	1	1	I	1
583:		 			 	 
Percy	10	  Severe:	Severe:	Severe:	  Severe:	Poor:
10101		wetness	wetness	wetness	wetness	wetness
j		İ	İ	İ	İ	İ
Pelan	3	Severe:	Severe:	Severe:	Severe:	Fair:
		wetness	seepage	wetness	seepage	wetness
		poor filter	wetness		wetness	
Foxhome	2	  Severe:	Severe:	Severe:	Severe:	Fair:
İ		wetness	seepage	wetness	seepage	too clayey
İ		İ	wetness	İ	wetness	wetness
527: Tawas	90	  Severe:	  Severe:	Severe:	  Severe:	  Poor:
1awas	30	percs slowly	excess humus	seepage	seepage	seepage
i		wetness	seepage	too sandy	wetness	too sandy
		subsides	wetness	wetness		wetness
			1			[
Leafriver	4	Severe:	Severe:	Severe:	Severe:	Poor:
		ponding	excess humus	seepage	seepage	seepage
		poor filter	seepage	too sandy	ponding	too sandy ponding
		 	ponding	ponding	 	ponding
Lupton	4	Severe:	Severe:	Severe:	Severe:	Poor:
j		percs slowly	excess humus	excess humus	seepage	excess humus
		wetness	seepage	seepage	wetness	wetness
		subsides	wetness	wetness		
Cormant	2	  Severe:	  Severe:	Severe:	  Severe:	  Poor:
Colmane	_	wetness	seepage	seepage	seepage	seepage
		poor filter	wetness	too sandy	wetness	too sandy
		į	i	wetness	İ	wetness
630: Wildwood	90	  Severe:	  Severe:	Severe:	  Severe:	  Poor:
wildwood	90	percs slowly	excess humus	too clayey	ponding	hard to pack
		ponding	ponding	ponding	ponding	too clayey
j						ponding
Boash	4	Severe:	Moderate:	Severe:	Severe:	Poor:
		percs slowly wetness	seepage	wetness	wetness	wetness
		wechess				
Dora	4	Severe:	Severe:	Severe:	Severe:	Poor:
		percs slowly	excess humus	too clayey	seepage	hard to pack
		subsides	seepage	ponding	ponding	too clayey
		ponding	ponding			ponding
Espelie	2	  Severe:	  Severe:	Severe:	  Severe:	  Poor:
TDPGTTG	_ <b>_</b>	percs slowly	seepage	too clayey	seepage	hard to pack
		wetness		wetness	wetness	too clayey
			į			wetness
			1			
543:	85	  Source	Govern	Source	  Severe:	Poort
Huot	00	Severe:   percs slowly	Severe:   seepage	Severe:   too clayey	severe:   seepage	Poor:   hard to pack
		percs slowly   wetness	seepaye	too clayey	seepage   wetness	too clayey
		poor filter		comess		coo crayey
			1	1	! !	1

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon   areas	Trench sanitary	Area sanitary	Daily cover
643: Thiefriver	12	  Severe:   percs slowly   wetness   poor filter	Severe:   seepage	  Severe:   too clayey   wetness	  Severe:   seepage   wetness	Poor:   hard to pack   too clayey   wetness
Redby	3	  Severe:   wetness   poor filter	Severe:   seepage   wetness	Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	Poor:   seepage   too sandy
6 <b>44:</b>		 				
Boash	85	  Severe:   percs slowly   wetness	Moderate:   seepage	Severe:   wetness	  Severe:   wetness 	Poor:   wetness
Percy	7	  Severe:   wetness	  Severe:   wetness	Severe:   wetness	  Severe:   wetness	  Poor:   wetness
Woodslake	5	  Severe:   percs slowly   ponding	Severe:   ponding	Severe:   too clayey   ponding	  Severe:   ponding 	Poor:   hard to pack   too clayey   ponding
Strandquist	3	  Severe:   wetness	Severe:   seepage   wetness	Severe:   wetness	  Severe:   wetness	  Poor:   wetness
645:     Espelie	85	  Severe:   percs slowly   wetness	  Severe:   seepage	  Severe:   too clayey   wetness	  Severe:   seepage   wetness	  Poor:   hard to pack   too clayey   wetness
Grano	5	  Severe:   percs slowly   wetness	  Slight   	  Severe:   too clayey   wetness	  Severe:   wetness 	  Poor:   hard to pack   too clayey   wetness
Hilaire	5	Severe:   percs slowly   wetness   poor filter	Severe:   seepage	  Severe:   too clayey   wetness	  Severe:   seepage   wetness	  Poor:   hard to pack   too clayey
  Wildwood	5	  Severe:   percs slowly   ponding	Severe:   excess humus   ponding	Severe:   too clayey   ponding	  Severe:   ponding 	Poor:   hard to pack   too clayey   ponding
651:		 			 	
Thiefriver	85	Severe:   percs slowly   wetness   poor filter	Severe:   seepage	Severe:   too clayey   wetness	Severe:   seepage   wetness	Poor:   hard to pack   too clayey   wetness
Grano	5	  Severe:   percs slowly   wetness	  Slight   	  Severe:   too clayey   wetness	  Severe:   wetness 	  Poor:   hard to pack   too clayey   wetness

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank   absorption   fields	Sewage lagoon   areas	Trench sanitary   landfill 	Area sanitary	Daily cover
						I
551: Huot    	   5 	  Severe:   percs slowly   wetness   poor filter	Severe:   seepage	  Severe:   too clayey   wetness	  Severe:   seepage   wetness	  Poor:   hard to pack   too clayey
Wildwood	5   	  Severe:   percs slowly   ponding	Severe:   excess humus   ponding	Severe:   too clayey   ponding	  Severe:   ponding 	  Poor:   hard to pack   too clayey   ponding
08:		 			 	 
Rushlake	85	  Severe:   wetness   poor filter	Severe:   seepage   wetness	Severe:   seepage   too sandy   wetness	Severe:   seepage   wetness	Poor:   seepage   small stones   too sandy
Corliss	6	  Severe:   poor filter 	Severe:   seepage	Severe:   seepage   too sandy	  Severe:   seepage 	Poor:   seepage   small stones
Redby	5	    Severe:   wetness	  Severe:   seepage	  Severe:   seepage	  Severe:   seepage	too sandy    Poor:   seepage
		poor filter 	wetness	too sandy wetness	wetness	too sandy
Hangaard	3   	  Severe:   wetness   poor filter	Severe:   seepage   wetness	  Severe:   seepage   too sandy   wetness	Severe:   seepage   wetness	Poor:   seepage   too sandy   wetness
  Pits, gravel	   1	 			 	
12: Rosewood	85	  Severe:   wetness   poor filter	Severe:   seepage   wetness	Severe:   seepage   too sandy   wetness	Severe:   seepage   wetness	Poor:   seepage   too sandy   wetness
Deerwood	6   	  Severe:   ponding   poor filter	Severe: excess humus seepage ponding	Severe:   seepage   too sandy   ponding	  Severe:   seepage   ponding	  Poor:   seepage   too sandy   ponding
Hangaard	5	  Severe:   wetness   poor filter	Severe:   seepage   wetness	Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	Poor:   seepage   too sandy   wetness
Ulen	   4 	  Severe:   wetness   poor filter	Severe:   seepage   wetness	  Severe:   too sandy   wetness	Severe:   seepage   wetness	  Poor:   seepage   too sandy
21B:		 			[ 	] 
Corliss	85	Severe:   poor filter 	Severe:   seepage	Severe:   seepage   too sandy	Severe:   seepage	Poor:   seepage   small stones   too sandy

Table 20.--Sanitary Facilities--Continued

component name of absorption areas landfill landfill for landf fields						1	
Rushlake		of	absorption				Daily cover
Rushlake				!	!		!
Wetness   Seepage   Seep		10	  Corromo	Corromo	Corromo	  Corromo	Dooms
Poor filter   Wetness   too sandy   Wetness   Small sto   too sandy   Wetness   Severe:   Seve	RUSHIARE	10			1		
Hangaard	i						small stones
wetness   seepage   seepage   seepage   seepage   too sandy   wetness   too sandy   wetness   too sandy   wetness   too sandy   wetness   wetnes	į		į -	į	:	į	too sandy
wetness   seepage   seepage   seepage   seepage   too sandy   wetness   too sandy   wetness   too sandy   wetness   too sandy   wetness   wetnes	   Hangaard	4	  Severe:	  Severe:	  Severe:	  Severe:	  Poor:
Pits, gravel 1			wetness	seepage	1	seepage	seepage
Pits, gravel	į		poor filter	wetness	too sandy	wetness	too sandy
Berner					wetness		wetness
Berner	Pits, gravel	1					
percs slowly   excess humus   excess humus   seepage   ponding   onding   ponding	733:		 			 	
Ponding   Seepage   Ponding   Ponding   Ponding   Ponding   Poor filter   Poor filte	Berner	90	Severe:	Severe:	Severe:	Severe:	Poor:
Grygla			:	1	!		excess humus
percs slowly wetness wetness beepage wetness beepage wetness poor filter  Seelyeville					ponding	ponding	ponding
percs slowly wetness wetness seepage wetness poor filter  Seelyeville	Grvgla	5	  Severe:	  Severe:	  Severe:	  Severe:	  Poor:
Seelyeville			!	1	1	!	1 1 1
percs slowly excess humus excess humus seepage excess humus subsides seepage seepage ponding p	ļ		1	wetness		wetness	 
percs slowly excess humus excess humus seepage excess humus subsides seepage seepage ponding p	Seelveville	5	  Severe:	  Severe:	  Severe:	  Severe:	  Poor:
ponding   ponding   ponding			!	1		!	excess humus
Mahkonce	ļ		!			ponding	ponding
percs slowly   wetness   wetness   wetness   too clayer   wetness     Auganaush	737:		 			 	
Auganaush	Mahkonce	85	Severe:	Severe:	Severe:	Severe:	Fair:
percs slowly wetness too clayey wetness hard to percs slowly wetness wetness too clayey wetness too clayer wetness  Eckvoll			:	wetness	wetness	wetness 	too clayey   wetness
wetness   wetness   too clayer   wetness   w	Auganaush	10	Severe:	Severe:	Severe:	  Severe:	Poor:
Eckvoll			percs slowly	wetness	too clayey	wetness	hard to pack
percs slowly   seepage   wetness   seepage   too clayer   wetness   wetness   wetness   wetness   wetness   wetness   wetness   poor filter			wetness		wetness		too clayey wetness
wetness   wetness   wetness   wetness   wetness     poor filter	Eckvoll	5	  Severe:	  Severe:	Severe:	  Severe:	  Fair:
poor filter	į		percs slowly	seepage	wetness	seepage	too clayey
Woodslake 85   Severe:   Severe:   Severe:   Poor:			!	wetness		wetness	wetness
Woodslake 85   Severe:   Severe:   Severe:   Poor:	755 <b>:</b>		 			 	
l la companyation de la companya		85	Severe:	Severe:	Severe:	Severe:	Poor:
percs slowly   ponding   too clayey   ponding   hard to p	I		percs slowly	ponding	too clayey	ponding	hard to pack
			ponding	!	ponding	!	too clayey
ponding			 			 	ponding
Boash 8   Severe:   Moderate:   Severe:   Severe:   Poor:	Boash	8	Severe:	Moderate:	Severe:	Severe:	Poor:
percs slowly   seepage   wetness   wetness   wetness   wetness			-	seepage	wetness	wetness	wetness 
	Wildwood	5	  Severe:	  Severe:	  Severe:	  Severe:	  Poor:
		3	1	1		•	hard to pack
	İ		-		:		too clayey
ponding			- <del>-</del>   		- <del>-</del>	 	
Dora 2   Severe:   Severe:   Severe:   Poor:	Dora	2	1	Severe:	Severe:	Severe:	Poor:
	ļ		-		:		hard to pack
					ponding	ponding	too clayey
ponding   ponding     ponding			ponaing	ponding	1	 	ponding

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent   of   map unit	Septic tank   absorption   fields	Sewage lagoon   areas	Trench sanitary   landfill 	Area sanitary   landfill	Daily cover   for landfill 
			!			!
767: Auganaush	   90   	  Severe:   percs slowly   wetness	Severe:   wetness	Severe:   too clayey   wetness	  Severe:   wetness 	  Poor:   hard to pack   too clayey   wetness
Mustinka	   5   	  Severe:   percs slowly   wetness	Severe:   wetness	Severe:   wetness	  Severe:   wetness	Poor: hard to pack wetness
Wildwood	3	  Severe:   percs slowly   ponding	Severe:   excess humus   ponding	Severe:   too clayey   ponding	Severe:   ponding 	Poor:   hard to pack   too clayey   ponding
Mahkonce	   2   	  Severe:   percs slowly   wetness	Severe:   wetness	  Severe:   wetness 	  Severe:   wetness	  Fair:   too clayey   wetness
794:		! 				i
Clearriver	85     	Severe:   wetness   poor filter	Severe:   seepage   wetness	Severe:   seepage   too sandy   wetness	Severe:   seepage   wetness	Poor:   seepage   too sandy
Hiwood	7   	  Severe:   wetness   poor filter	Severe:   seepage   wetness	Severe:   seepage   too sandy   wetness	Severe:   seepage   wetness	Poor:   seepage   too sandy
Meehan	   5   	  Severe:   wetness   poor filter 	Severe:   seepage   wetness	Severe:   seepage   too sandy   wetness	   Severe:   seepage   wetness	  Poor:   seepage   too sandy   wetness
Faunce	   3   	  Severe:   poor filter   	  Severe:   seepage	  Severe:   seepage   too sandy	  Severe:   seepage 	  Poor:   seepage   small stones   too sandy
1000						
1002: Fluvaquents, frequently	 	 				
flooded	90   	Severe:   flooding   ponding   poor filter	Severe:   flooding   seepage   ponding	Severe:   flooding   seepage   ponding	Severe:   flooding   seepage   ponding	Poor:   seepage   ponding
Seelyeville	   6   	  Severe:   percs slowly   ponding	Severe:   excess humus   seepage   ponding	Severe:   excess humus   seepage   ponding	Severe:   seepage   ponding	  Poor:   excess humus   ponding
Hapludalfs	   2   	  Severe:   percs slowly   slope   wetness	Severe:   seepage   slope   wetness		Severe:   seepage   slope   wetness	  Poor:   slope 
Water	   2	 			 	

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank   absorption   fields	Sewage lagoon   areas	Trench sanitary   landfill 	Area sanitary   landfill 	Daily cover   for landfill 
I						
1030:     Pits, gravel	75	 			 	
Udipsamments	20	  Severe:   slope   poor filter	Severe:   seepage   slope	Severe:   seepage   slope   too sandy	  Severe:   seepage   slope	Poor:   seepage   slope   too sandy
Corliss	2	  Severe:   poor filter   	Severe:   seepage	Severe:   seepage   too sandy	  Severe:   seepage 	Poor:   seepage   small stones   too sandy
Karlstad      	2	  Severe:   wetness   poor filter	Severe:   seepage   wetness	Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	  Poor:   seepage   small stones   too sandy
Hangaard      	1	  Severe:   wetness   poor filter 	Severe:   seepage   wetness	Severe:   seepage   too sandy   wetness	   Severe:   seepage   wetness 	Poor:   seepage   too sandy   wetness
1031:						
Seelyeville, ponded	90	Severe:   percs slowly   ponding 	Severe:   excess humus   seepage   ponding	Severe:   excess humus   seepage   ponding	Severe:   seepage   ponding 	Poor:   excess humus   ponding 
Cathro	4	   percs slowly   ponding	Severe:   excess humus   seepage   ponding	Severe:   ponding	Severe:   seepage   ponding	Poor:   ponding 
Dora    	3	  Severe:   percs slowly   subsides   ponding	Severe:   excess humus   seepage   ponding	Severe:   too clayey   ponding	  Severe:   seepage   ponding	Poor:   hard to pack   too clayey   ponding
Markey	3	Severe:   percs slowly   subsides   ponding	Severe:   excess humus   seepage   ponding	Severe:   seepage   too sandy   ponding	  Severe:   seepage   ponding	Poor:   seepage   too sandy   ponding
1067:		 			1	l I
Fluvaquents, frequently flooded	60	  Severe:   flooding   ponding   poor filter	  Severe:   flooding   seepage   ponding	  Severe:   flooding   seepage   ponding	  Severe:   flooding   seepage   ponding	  Poor:   seepage   ponding
Hapludalfs    	30	  Severe:   percs slowly   slope   wetness	Severe:   seepage   slope   wetness	Severe:   seepage   slope   wetness	Severe:   seepage   slope   wetness	  Poor:   slope 
Seelyeville    	5	  Severe:   percs slowly   ponding	Severe:   excess humus   seepage   ponding	Severe:   excess humus   seepage   ponding	  Severe:   seepage   ponding	  Poor:   excess humus   ponding

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon   areas	Trench sanitary   landfill	Area sanitary	Daily cover
1133B: Skime	85	  Severe:   wetness   poor filter	  Severe:   seepage   wetness	  Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	  Poor:   seepage   too sandy
Hiwood	10	  Severe:   wetness   poor filter	Severe:   seepage   wetness	Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	  Poor:   seepage   too sandy
Zippel	5	  Severe:   wetness   	Severe:   seepage   wetness	Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	Poor:   wetness 
1134:		 			 	
Borup	55	Severe:   wetness   poor filter	Severe:   seepage   wetness	Severe:   seepage   too sandy   wetness	Severe:   seepage   wetness	Poor:   wetness 
Glyndon	35	  Severe:   wetness 	Severe:   seepage   wetness	Severe:   seepage   too sandy   wetness	   Severe:   seepage   wetness	  Fair:   too sandy   wetness
Augsburg, depressional-	5	  Severe:   percs slowly   ponding	Severe:   seepage   ponding	Severe:   too clayey   ponding	  Severe:   seepage   ponding	Poor:   hard to pack   too clayey   ponding
Skime	5	  Severe:   wetness   poor filter	Severe:   seepage   wetness	Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	Poor:   seepage   too sandy
1144:		 				
Strathcona, depressional	45	Severe:   percs slowly   ponding   poor filter	Severe:   seepage   ponding	  Severe:   ponding 	Severe:   seepage   ponding	  Poor:   ponding   
Kratka, depressional	45	  Severe:   percs slowly   ponding   poor filter	Severe:   seepage   ponding	  Severe:   ponding   	  Severe:   seepage   ponding	  Poor:   ponding   
Kratka	5	  Severe:   percs slowly   wetness   poor filter	Severe:   seepage   wetness	  Severe:   wetness 	   Severe:   seepage   wetness	  Poor:   wetness 
Northwood	5	  Severe:   ponding   	  Severe:   excess humus   seepage   ponding	  Severe:   ponding 	  Severe:   seepage   ponding	  Poor:   ponding   

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon   areas	Trench sanitary	Area sanitary	Daily cover
   1154						
Sax	90	  Severe:   ponding 	Severe:   excess humus   seepage   ponding	Severe:   ponding	  Severe:   ponding   	  Poor:   ponding   
Wabanica	5	Severe:   wetness	Severe:   wetness	Severe:   wetness	  Severe:   wetness	Poor:
Cathro	3	  Severe:   percs slowly   ponding	Severe:   excess humus   seepage   ponding	  Severe:   ponding   	  Severe:   seepage   ponding	  Poor:   ponding   
Woodslake	2	  Severe:   percs slowly   ponding 	Severe:   ponding	Severe:   too clayey   ponding	  Severe:   ponding   	  Poor:   hard to pac!   too clayey   ponding
.158:					 	
Skagen	85	Severe:   wetness	Severe: seepage wetness	Severe:   seepage   wetness	Severe:   seepage   wetness	Fair:   wetness 
Percy	10	  Severe:   wetness	Severe:   wetness	Severe:   wetness	  Severe:   wetness	Poor:
Foxhome	5	  Severe:   wetness	Severe:   seepage   wetness	Severe:   wetness	Severe:   seepage   wetness	Fair:   too clayey   wetness
l170: Skagen, very cobbly	85	  Severe:   wetness	Severe:   seepage   wetness	  Severe:   seepage   wetness	  Severe:   seepage   wetness	    Fair:   wetness 
Percy, very cobbly	10	  Severe:   wetness	Severe:   wetness	Severe:   wetness	  Severe:   wetness	Poor:   wetness
Foxhome	5	  Severe:   wetness 	Severe:   seepage   wetness	  Severe:   wetness 	  Severe:   seepage   wetness	  Fair:   too clayey   wetness
L179B:		 			 	
Moranville	85	Severe:   percs slowly   wetness	Severe: seepage wetness	Severe:   wetness	Severe:   seepage   wetness	Fair:   too clayey   wetness
Baudette	5	  Severe:   wetness	Severe:   wetness	Severe:   wetness	  Severe:   wetness	Fair:   wetness
Hiwood	5	  Severe:   wetness   poor filter	Severe:   seepage   wetness	Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	  Poor:   seepage   too sandy
Spooner	5	  Severe:   wetness	Severe:   seepage   wetness	  Severe:   wetness	  Severe:   wetness	  Poor:   wetness

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon   areas	Trench sanitary   landfill 	Area sanitary   landfill 	Daily cover   for landfill 
			!	!	!	!
1181:   Rosewood	50	  Severe:	  Severe:	  Severe:	  Severe:	  Poor:
Nosewood	]	wetness	seepage	seepage	seepage	seepage
		poor filter	wetness	too sandy	wetness	too sandy
				wetness		wetness
Ulen	40	  Severe:	  Severe:	Severe:	  Severe:	  Poor:
		wetness	seepage	too sandy	seepage	seepage
		poor filter	wetness	wetness	wetness	too sandy
Redby	5	Severe:	Severe:	Severe:	Severe:	Poor:
		wetness	seepage	seepage	seepage	seepage
		poor filter   	wetness   	too sandy wetness	wetness   	too sandy   
Deerwood	3	Severe:	Severe:	Severe:	Severe:	Poor:
		ponding	excess humus	seepage	seepage	seepage
		poor filter	seepage   ponding	too sandy ponding	ponding 	too sandy ponding
Syrene	2	Severe:	  Severe:	Severe:	  Severe:	  Poor:
İ		wetness	seepage	seepage	seepage	seepage
		poor filter	wetness	too sandy wetness	wetness	too sandy wetness
1100			į			į
1182:   Warroad	85	  Severe:	  Severe:	  Severe:	  Severe:	  Poor:
walload	65	percs slowly	seepage	wetness	seepage	wetness
		wetness   poor filter	wetness		wetness	
Wabanica	7	Severe:	Severe:	Severe:	  Severe:	Poor:
		wetness	wetness	wetness	wetness	wetness
Enstrom	5	Severe:	Severe:	Severe:	  Severe:	Fair:
		percs slowly	seepage	wetness	seepage	too clayey
		wetness   poor filter	wetness		wetness 	wetness
Sax	3	  Severe:	Severe:	Severe:	  Severe:	Poor:
		ponding	excess humus	ponding	ponding	ponding
			seepage   ponding		 	 
1187:					 	
Dora, ponded	90	Severe:	Severe:	Severe:	Severe:	Poor:
		percs slowly	excess humus	too clayey	seepage	hard to pack
		ponding   	seepage   ponding	ponding   	ponding   	too clayey   ponding 
Seelyeville, ponded	4	Severe:	Severe:	Severe:	Severe:	Poor:
		percs slowly	excess humus	excess humus	seepage	excess humus
		ponding	seepage ponding	seepage ponding	ponding 	ponding 
Wildwood	4	  Severe:	  Severe:	  Severe:	  Severe:	  Poor:
i		percs slowly	excess humus	too clayey	ponding	hard to pack
		ponding	ponding	ponding	 	too clayey ponding
Danah	•		l Madamata			
Boash	2	Severe:   percs slowly	Moderate: seepage	Severe:   wetness	Severe:   wetness	Poor:

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon   areas	Trench sanitary	Area sanitary	Daily cover
ĺ						1
1191:   Sahkahtay    	85	  Severe:   wetness   poor filter	Severe:   seepage   wetness	  Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	  Poor:   seepage   small stones   too sandy
   Cormant      	5	  Severe:   wetness   poor filter 	Severe:   seepage   wetness	  Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	  Poor:   seepage   too sandy   wetness
   Deerwood    	5	  Severe:   ponding   poor filter	  Severe:   excess humus   seepage   ponding	  Severe:   seepage   too sandy   ponding	  Severe:   seepage   ponding	  Poor:   seepage   too sandy   ponding
Karlstad    	3	  Severe:   wetness   poor filter 	Severe:   seepage   wetness	  Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	  Poor:   seepage   small stones   too sandy
Redby	2	  Severe:   wetness   poor filter	Severe:   seepage   wetness	  Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	  Poor:   seepage   too sandy 
1206:					İ	İ
Cormant	55	Severe:   wetness   poor filter 	Severe:   seepage   wetness	Severe:   seepage   too sandy   wetness	Severe:   seepage   wetness	Poor:   seepage   too sandy   wetness
Redby	35	Severe:   wetness   poor filter	Severe:   seepage   wetness	Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	Poor:   seepage   too sandy
Hiwood	5	  Severe:   wetness   poor filter	Severe:   seepage   wetness	  Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	  Poor:   seepage   too sandy
Leafriver	5	  Severe:   ponding   poor filter	Severe:   excess humus   seepage   ponding	Severe:   seepage   too sandy   ponding	  Severe:   seepage   ponding	  Poor:   seepage   too sandy   ponding
1214:		 			 	
Mustinka	90	Severe:   percs slowly   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Poor: hard to pack wetness
Espelie	4	  Severe:   percs slowly   wetness	Severe:   seepage	Severe:   too clayey   wetness	  Severe:   seepage   wetness	  Poor:   hard to pack   too clayey   wetness
Wildwood	4	  Severe:   percs slowly   ponding	Severe:   excess humus   ponding	  Severe:   too clayey   ponding	  Severe:   ponding 	  Poor:   hard to pack   too clayey   ponding

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon   areas	Trench sanitary   landfill 	Area sanitary	Daily cover
1214: Dalbo	2   	  Severe:   percs slowly   wetness	Severe:   wetness	  Severe:   too clayey   wetness	  Severe:   wetness	  Poor:   hard to pack   too clayey
1274B:	<u> </u>	 			 	
Redby	40	Severe:   wetness   poor filter	Severe:   seepage   wetness	Severe:   seepage   too sandy   wetness	Severe:   seepage   wetness	Poor:   seepage   too sandy
Hiwood	30	  Severe:   wetness   poor filter	Severe:   seepage   wetness	Severe:   seepage   too sandy   wetness	Severe:   seepage   wetness	Poor:   seepage   too sandy
Leafriver, wooded	15	  Severe:   ponding   poor filter	Severe:   excess humus   seepage   ponding	Severe:   seepage   too sandy   ponding	  Severe:   seepage   ponding	  Poor:   seepage   too sandy   ponding
Clearriver	5	  Severe:   wetness   poor filter	Severe:   seepage   wetness	Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	Poor:   seepage   too sandy
Cormant	5	  Severe:   wetness   poor filter	Severe:   seepage   wetness	Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	Poor:   seepage   too sandy   wetness
Zimmerman    	5   5	  Severe:   poor filter 	Severe:   seepage	  Severe:   seepage   too sandy	  Severe:   seepage	  Poor:   seepage   too sandy
1298:		 			 	
Borup	90	  Severe:   wetness   poor filter	Severe:   seepage   wetness	Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	Poor:  wetness
Augsburg, depressional-	3	  Severe:   percs slowly   ponding	Severe:   seepage   ponding	Severe:   too clayey   ponding	  Severe:   seepage   ponding	Poor:   hard to pack   too clayey   ponding
Glyndon	3	  Severe:   wetness	Severe:   seepage   wetness	Severe:   seepage   too sandy   wetness	   Severe:   seepage   wetness	  Fair:   too sandy   wetness
Sago	2	  Severe:   ponding 	Severe:   excess humus   seepage   ponding	  Severe:   too sandy   ponding	  Severe:   ponding 	Poor:   too sandy   ponding
Skime	2   	  Severe:   wetness   poor filter 	Severe:   seepage   wetness	  Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	  Poor:   seepage   too sandy

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon   areas	  Trench sanitary   landfill 	   Area sanitary   landfill 	Daily cover   for landfill
1302:					 	
Foldahl	85	Severe:   percs slowly   wetness   poor filter	Severe:   seepage   wetness	Severe:   wetness 	Severe:   seepage   wetness	Fair:   small stones   too clayey   wetness
Kratka	10	Severe:   percs slowly   wetness   poor filter	Severe:   seepage   wetness	Severe:   wetness	  Severe:   seepage   wetness	Poor:   wetness
Foxhome	5	  Severe:   wetness	Severe:   seepage   wetness	Severe:   wetness 	  Severe:   seepage   wetness	Fair:   too clayey   wetness
1304: Glyndon	85 	  Severe:   wetness 	Severe:   seepage   wetness	  Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	  Fair:   too sandy   wetness
Borup	10	  Severe:   wetness   poor filter	Severe:   seepage   wetness	Severe:   seepage   too sandy   wetness	Severe:   seepage   wetness	  Poor:   wetness 
Skime	5	  Severe:   wetness   poor filter	Severe:   seepage   wetness	Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	Poor:   seepage   too sandy
1305: Hilaire	85	  Severe:   percs slowly   wetness   poor filter	  Severe:   seepage 	  Severe:   too clayey   wetness	  Severe:   seepage   wetness	  Poor:   hard to pack   too clayey
Espelie	11	  Severe:   percs slowly   wetness	Severe:   seepage 	  Severe:   too clayey   wetness	  Severe:   seepage   wetness	  Poor:   hard to pack   too clayey   wetness
Grano	2   	  Severe:   percs slowly   wetness	  Slight   	  Severe:   too clayey   wetness	  Severe:   wetness 	Poor:   hard to pack   too clayey   wetness
Redby	2	   Severe:   wetness   poor filter 	Severe:   seepage   wetness	Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	Poor:   seepage   too sandy
1314:			!	!	!	
Tacoosh	90   	Severe:   percs slowly   ponding 	Severe:   excess humus   seepage   ponding	Severe:   excess humus   ponding 	Severe:   seepage   ponding 	Poor:   excess humus   ponding 
Rifle	8	  Severe:   ponding 	Severe:   excess humus   seepage   ponding	Severe:   excess humus   seepage   ponding	  Severe:   seepage   ponding 	Poor:   excess humus   ponding

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon   areas	Trench sanitary	Area sanitary	Daily cover
1314: Sax	2	  Severe:   ponding   	  Severe:   excess humus   seepage   ponding	  Severe:   ponding 	  Severe:   ponding   	  Poor:   ponding 
1316: Wheatville	85	  Severe:   percs slowly   wetness	Severe:   seepage	  Severe:   too clayey   wetness	  Severe:   seepage   wetness	  Poor:   hard to pack   too clayey
Augsburg	13	  Severe:   percs slowly   wetness	Severe:   seepage	  Severe:   too clayey   wetness	  Severe:   seepage   wetness	  Poor:   hard to pack   too clayey   wetness
Grano	2	  Severe:   percs slowly   wetness	Slight	  Severe:   too clayey   wetness	  Severe:   wetness 	  Poor:   hard to pack   too clayey   wetness
1326: Augsburg, depressional-	45	  Severe:   percs slowly   ponding	  Severe:   seepage   ponding	  Severe:   too clayey   ponding	  Severe:   seepage   ponding	  Poor:   hard to pack   too clayey   ponding
Wabanica, depressional-	45	  Severe:   percs slowly   ponding	  Severe:   ponding	  Severe:   ponding 	  Severe:   ponding 	  Poor:   ponding 
Sax	6	  Severe:   ponding   	Severe:   excess humus   seepage   ponding	  Severe:   ponding   	  Severe:   ponding 	  Poor:   ponding   
Espelie	2	  Severe:   percs slowly   wetness 	Severe:   seepage	  Severe:   too clayey   wetness	  Severe:   seepage   wetness	  Poor:   hard to pack   too clayey   wetness
Zippel	2	  Severe:   wetness   	Severe:   seepage   wetness	  Severe:   seepage   too sandy   wetness	   Severe:   seepage   wetness	  Poor:   wetness   
1327B: Karlstad	65	  Severe:   wetness   poor filter	Severe:   seepage   wetness	  Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	Poor:   seepage   small stones   too sandy
Marquette	25	  Severe:   poor filter   	  Severe:   seepage 	  Severe:   seepage   too sandy	  Severe:   seepage 	Poor:   seepage   small stones   too sandy
Sahkahtay	7	  Severe:   wetness   poor filter	Severe:   seepage   wetness	  Severe:   seepage   too sandy   wetness	   Severe:   seepage   wetness	Poor:   seepage   small stones   too sandy

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	   Percent   of   map unit	   Septic tank   absorption   fields	   Sewage lagoon   areas	  Trench sanitary   landfill 	   Area sanitary   landfill 	   Daily cover   for landfill 
1327B: Redby	     3   	  Severe:   wetness   poor filter	  Severe:   seepage   wetness	  Severe:   seepage   too sandy   wetness	    Severe:   seepage   wetness 	  Poor:   seepage   too sandy 
1328: Northwood, wooded	90   	  Severe:   ponding 	Severe:   excess humus   seepage   ponding	Severe:   ponding 	Severe:   seepage   ponding	  Poor:   ponding   
Berner, wooded	   5   	Severe:   percs slowly   ponding   poor filter	Severe:   excess humus   seepage   ponding	Severe:   excess humus   ponding	  Severe:   seepage   ponding 	Poor:   excess humus   ponding
Grygla	   5   	Severe:   percs slowly   wetness   poor filter	Severe:   seepage   wetness	  Severe:   wetness	  Severe:   seepage   wetness	Poor:   wetness 
1333: Dora, wooded	90	  Severe:   percs slowly   subsides   ponding	  Severe:   excess humus   seepage   ponding	  Severe:   too clayey   ponding	  Severe:   seepage   ponding	  Poor:   hard to pack   too clayey   ponding
Lupton	   <b>4</b>   	  Severe:   percs slowly   wetness   subsides	Severe:   excess humus   seepage   wetness		  Severe:   seepage   wetness	Poor:   excess humus   wetness
Wildwood	   <b>4</b>   	  Severe:   percs slowly   ponding	  Severe:   excess humus   ponding	  Severe:   too clayey   ponding	  Severe:   ponding   	Poor:   hard to pack   too clayey   ponding
Auganaush	   2   	  Severe:   percs slowly   wetness	  Severe:   wetness 	  Severe:   too clayey   wetness	  Severe:   wetness   	Poor:   hard to pack   too clayey   wetness
1356: Water, miscellaneous.	     	   	     	 	     	     
1399B: Two Inlets	   85   	  Severe:   poor filter	  Severe:   seepage	  Severe:   seepage   too sandy	  Severe:   seepage 	Poor:   seepage   small stones   too sandy
Wurtsmith	   6   	  Severe:   wetness   poor filter	  Severe:   seepage   	  Severe:   seepage   too sandy   wetness	  Severe:   seepage   	  Poor:   seepage   too sandy
Zimmerman	   6   	  Severe:   poor filter 	  Severe:   seepage 	  Severe:   seepage   too sandy	  Severe:   seepage   	  Poor:   seepage   too sandy

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary   landfill	Area sanitary	Daily cover
1399B: Meehan	3	    Severe:   wetness   poor filter	  Severe:   seepage   wetness	   Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	  Poor:   seepage   too sandy   wetness
1401: Grygla, depressional	90	  Severe:   percs slowly   ponding   poor filter	  Severe:   seepage   ponding	  Severe:   ponding	  Severe:   seepage   ponding	  Poor:   ponding 
Northwood, wooded	5	  Severe:   ponding   	Severe:   excess humus   seepage   ponding	  Severe:   ponding 	  Severe:   seepage   ponding	  Poor:   ponding   
Chilgren	3	  Severe:   wetness	Severe:   wetness	Severe:   wetness	  Severe:   wetness	Poor:
Grygla	2	  Severe:   percs slowly   wetness   poor filter	Severe:   seepage   wetness	  Severe:   wetness   	   seepage   wetness	Poor:   wetness 
1402: Leafriver, wooded	90	  Severe:   ponding   poor filter	  Severe:   excess humus   seepage   ponding	  Severe:   seepage   too sandy   ponding	Severe:   seepage   ponding	Poor:   seepage   too sandy   ponding
Cormant	4	  Severe:   wetness   poor filter 	  Severe:   seepage   wetness	  Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	Poor:   seepage   too sandy   wetness
Tawas	4	  Severe:   percs slowly   wetness   subsides	Severe:   excess humus   seepage   wetness	  Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	Poor:   seepage   too sandy   wetness
Redby	2	  Severe:   wetness   poor filter 	Severe:   seepage   wetness	  Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	  Poor:   seepage   too sandy 
1404: Berner, wooded	90	  Severe:   percs slowly   ponding   poor filter	Severe:   excess humus   seepage   ponding	  Severe:   excess humus   ponding	  Severe:   seepage   ponding	  Poor:   excess humus   ponding
Lupton	4	  Severe:   percs slowly   wetness   subsides	Severe:   excess humus   seepage   wetness		Severe:   seepage   wetness	Poor:   excess humus   wetness
Northwood, wooded	4	  Severe:   ponding   	  Severe:   excess humus   seepage   ponding	  Severe:   ponding 	  Severe:   seepage   ponding	  Poor:   ponding   

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank   absorption   fields	Sewage lagoon   areas	Trench sanitary	Area sanitary	Daily cover
1404: Grygla	2	  Severe:   percs slowly   wetness   poor filter	Severe:   seepage   wetness	  Severe:   wetness 	  Severe:   seepage   wetness	  Poor:   wetness 
1405:		 			 	
Lallie	90	  Severe:   percs slowly   ponding	Severe:   ponding	Severe:   too clayey   ponding	Severe:   ponding 	Poor:   hard to pack   too clayey   ponding
Sax	7	  Severe:   ponding   	Severe:   excess humus   seepage   ponding	  Severe:   ponding   	  Severe:   ponding   	  Poor:   ponding   
Wabanica	   3 	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness	  Poor:   wetness
1414:						
Nereson, very cobbly	85	  Severe:   wetness	Severe:   seepage   wetness	Severe:   seepage   wetness	  Severe:   seepage   wetness	Fair:   small stones   wetness
Percy, very cobbly	   10 	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness	Poor:
Pelan	3	  Severe:   wetness   poor filter	Severe:   seepage   wetness	  Severe:   wetness	  Severe:   seepage   wetness	  Fair:   wetness
Foxhome	2   	  Severe:   wetness	  Severe:   seepage   wetness	  Severe:   wetness	  Severe:   seepage   wetness	  Fair:   too clayey   wetness
1428:		 			 	
Karlsruhe	85	Severe:   wetness   poor filter	Severe:   seepage   wetness	Severe:   seepage   too sandy   wetness	Severe:   seepage   wetness	Poor:   seepage   too sandy
Syrene	10	  Severe:   wetness   poor filter 	Severe:   seepage   wetness	Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	Poor:   seepage   too sandy   wetness
Ulen	5 	  Severe:   wetness   poor filter	  Severe:   seepage   wetness	  Severe:   too sandy   wetness	  Severe:   seepage   wetness	  Poor:   seepage   too sandy
1444:		 				
Wurtsmith	   85 	  Severe:   wetness   poor filter	Severe:   seepage	Severe:   seepage   too sandy   wetness	  Severe:   seepage 	Poor:   seepage   too sandy
Meehan	10	  Severe:   wetness   poor filter	Severe:   seepage   wetness	Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	Poor:   seepage   too sandy   wetness

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon   areas	Trench sanitary   landfill	Area sanitary	Daily cover
	2	    Severe:   wetness   poor filter	  Severe:   seepage   wetness	  Severe:   seepage   too sandy	  Severe:   seepage   wetness	  Poor:   seepage   too sandy
Two Inlets	2	    Severe:   poor filter	  Severe:   seepage	wetness    Severe:   seepage	    Severe:   seepage	    Poor:   seepage
				too sandy	    -	small stones   too sandy 
Cormant	1	Severe:   wetness   poor filter   	Severe:   seepage   wetness	Severe:   seepage   too sandy   wetness	Severe:   seepage   wetness 	Poor:   seepage   too sandy   wetness
448:						
Grano	90	Severe:   percs slowly   wetness	Slight     	Severe:   too clayey   wetness	Severe:   wetness 	Poor:   hard to pack   too clayey   wetness
Percy	5	  Severe:   wetness	Severe:   wetness	  Severe:   wetness	  Severe:   wetness	Poor:   wetness
Augsburg	3	  Severe:   percs slowly   wetness	Severe:   seepage 	Severe:   too clayey   wetness	Severe:   seepage   wetness	Poor:   hard to pack   too clayey   wetness
Woodslake	2	  Severe:   percs slowly   ponding	  Severe:   ponding 	  Severe:   too clayey   ponding	  Severe:   ponding 	  Poor:   hard to pack   too clayey   ponding
 1449:		 			 	
Grano	90	Severe:   percs slowly   wetness	Slight   	Severe:   too clayey   wetness	Severe:   wetness	Poor:   hard to pack   too clayey   wetness
Percy	5	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness	  Severe:   wetness	Poor:   wetness
Augsburg	3	  Severe:   percs slowly   wetness	Severe:   seepage 	Severe:   too clayey   wetness	  Severe:   seepage   wetness	Poor:   hard to pack   too clayey   wetness
Woodslake	2	  Severe:   percs slowly   ponding	Severe:   ponding 	  Severe:   too clayey   ponding 	  Severe:   ponding 	  Poor:   hard to pack   too clayey   ponding
L807: Cathro, ponded	90	  Severe:   percs slowly   ponding	  Severe:   excess humus   seepage   ponding	  Severe:   ponding 	  Severe:   seepage   ponding	  Poor:   ponding 

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon   areas	  Trench sanitary   landfill 	   Area sanitary   landfill 	Daily cover   for landfill
1807:						
Haug	4	  Severe:   ponding 	Severe:   excess humus   seepage   ponding	Severe:   ponding 	  Severe:   ponding 	  Poor:   ponding   
Seelyeville, ponded	4	  Severe:   percs slowly   ponding 	Severe:   excess humus   seepage   ponding	Severe:   excess humus   seepage   ponding	  Severe:   seepage   ponding 	Poor:   excess humus   ponding 
Percy	2	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Poor:   wetness
1808:			1	[	[	
Markey, ponded	90   	Severe:   percs slowly   subsides   ponding	Severe:   excess humus   seepage   ponding	Severe:   seepage   too sandy   ponding	Severe:   seepage   ponding	Poor:   seepage   too sandy   ponding
Leafriver	4	Severe:   ponding   poor filter 	Severe:   excess humus   seepage   ponding	Severe:   seepage   too sandy   ponding	Severe:   seepage   ponding	Poor:   seepage   too sandy   ponding
Seelyeville, ponded	4	   percs slowly   ponding	Severe:   excess humus   seepage   ponding	Severe:   excess humus   seepage   ponding	Severe:   seepage   ponding	Poor:   excess humus   ponding
Cormant	2	  Severe:   wetness   poor filter 	Severe:   seepage   wetness	Severe:   seepage   too sandy   wetness	  Severe:   seepage   wetness	Poor:   seepage   too sandy   wetness
1918:						
Croke	85	Severe:   percs slowly   wetness	Severe: seepage	Severe:   too clayey   wetness	Severe:   seepage   wetness	Poor:   hard to pack   too clayey
Augsburg	13	Severe:   percs slowly   wetness	Severe:   seepage 	Severe:   too clayey   wetness	  Severe:   seepage   wetness	Poor:   hard to pack   too clayey   wetness
Grano	2	  Severe:   percs slowly   wetness	Slight 	  Severe:   too clayey   wetness 	  Severe:   wetness   	Poor:   hard to pack   too clayey   wetness
1923B:			İ	İ		
Garnes, very stony	85	Severe:   wetness	Severe:   wetness	Severe:   wetness	Severe:   wetness	Fair:   small stones   wetness
Chilgren	   10 	  Severe:   wetness 	Severe:   wetness	Severe:   wetness	  Severe:   wetness 	Poor:  wetness
Eckvoll	3	Severe:   percs slowly   wetness   poor filter	Severe:   seepage   wetness	Severe:   wetness 	Severe:   seepage   wetness	Fair:   too clayey   wetness

Table 20.--Sanitary Facilities--Continued

Map symbol and	Percent	Septic tank	Sewage lagoon	Trench sanitary	Area sanitary	Daily cover
component name	of	absorption	areas	landfill	landfill	for landfill
	map unit	fields	1	<u> </u>		<u> </u>
923B:		 				 
Pelan	2	Severe:	Severe:	Severe:	Severe:	Fair:
į		wetness	seepage	wetness	seepage	wetness
į		poor filter	wetness		wetness	į
984:		 				 
Leafriver	90	Severe:	Severe:	Severe:	Severe:	Poor:
		ponding	excess humus	seepage	seepage	seepage
		poor filter	seepage	too sandy	ponding	too sandy
			ponding	ponding		ponding
  Cormant	5	  Severe:	  Severe:	Severe:	  Severe:	Poor:
I		wetness	seepage	seepage	seepage	seepage
I		poor filter	wetness	too sandy	wetness	too sandy
		 		wetness		wetness
  Markey	3	  Severe:	Severe:	Severe:	Severe:	Poor:
I		percs slowly	excess humus	seepage	seepage	seepage
		subsides	seepage	too sandy	ponding	too sandy
		ponding	ponding	ponding		ponding
  Redby	2	  Severe:	Severe:	Severe:	Severe:	Poor:
		wetness	seepage	seepage	seepage	seepage
I		poor filter	wetness	too sandy	wetness	too sandy
				wetness		
': 		 			 	
Water.						

Table 21.--Construction Materials

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. See text for definitions of terms used in this table. Absence of an entry indicates that no rating is applicable.)

	Percent				
Map symbol and	of	Roadfill	Sand	Gravel	Topsoil
component name	map unit	1			
7:		 		l I	
Colvin	85	Poor:	  Improbable:	Improbable:	Poor:
		low strength	excess fines	excess fines	wetness
i		wetness			""
Bearden	5	Poor:	Improbable:	Improbable:	Good
		low strength	excess fines	excess fines	j
Grano	5	Poor:	Improbable:	Improbable:	Poor:
		low strength	excess fines	excess fines	too clayey
		shrink-swell			wetness
		wetness			
_	_				1-
Sax	5	Poor:	Improbable:	Improbable:	Poor:
		wetness	excess fines	excess fines	wetness
8B:		 			
ob: Hiwood	85	  Fair:	Probable	  Improbable:	Poor:
		wetness		too sandy	too sandy
Redby	7	  Fair:	Probable	Improbable:	Poor:
		wetness	į	too sandy	too sandy
j					j
Clearriver	3	Fair:	Probable	Improbable:	Poor:
		wetness		too sandy	small stones
					too sandy
Cormant	3	Poor:	Probable	Improbable:	Poor:
		wetness		too sandy	too sandy
		l İ			wetness
Zimmerman	2	  Good	Probable	  Improbable:	Poor:
	_			too sandy	too sandy
i					
2:					
Augsburg	85	Poor:	Improbable:	Improbable:	Poor:
		low strength	excess fines	excess fines	wetness
		shrink-swell			
		wetness			
			į.	į	!
Croke	5	Poor:	Improbable:	Improbable:	Fair:
		low strength	excess fines	excess fines	thin layer
		shrink-swell			too sandy
Grano	5	  Poor•	  Tmprobable:	  Tmprobable:	Poor
31 alio	5	Poor:	Improbable:   excess fines	Improbable:   excess fines	Poor:
		low strength shrink-swell	evcess IIII68	evcess Illies	too clayey
		wetness			Mecuess
Sago	5	Poor:	Improbable:	Improbable:	Poor:
		'			
i		wetness	excess fines	excess fines	too sandy

Table 21.--Construction Materials--Continued

				<u> </u>
85			Improbable:	Poor:
	wetness	excess fines	excess fines	too sandy
10	   B	Tour or all all 2	Tour and to be 1 a	15
12		: <del>-</del>	: -	Poor:
	wetness	excess fines	excess fines	thin layer
	 			wetness
3	  Fair:	  Tmprobable:	  Tmprobable:	Poor:
				small stones
i		i		
85	Fair:	Improbable:	Improbable:	Poor:
į	wetness	thin layer	too sandy	too sandy
į				į
10	Poor:	Probable	Improbable:	Poor:
	wetness		too sandy	too sandy
I				wetness
3	Fair:	Probable	Improbable:	Poor:
	wetness	ļ	too sandy	too sandy
ļ		ļ	į.	!
2	Fair:	Probable	Probable	Poor:
	wetness			area reclaim
				small stones
				too sandy
	   Talan	Tour wall als last	T	  Poor:
85				small stones
	wethess	excess lines	excess lines	SMail Stones
12	Poort	  Tmprobable:	  Tmprobable:	Poor:
			· -	small stones
		CACCOD TINCE	CACCOD LINCS	wetness
3	Fair:	Improbable:	Improbable:	Fair:
	wetness	excess fines	excess fines	small stones
85	Poor:	Improbable:	Improbable:	Good
!	low strength	excess fines	excess fines	!
				1
15			· -	Poor:
	-	excess fines	excess fines	wetness
	wetness			
	  -	I	I I	1
   0E	  Fair:	  Tmprobable:	  Tmprobable:	Poor:
63			· -	small stones
	werness	evcess Illies	evcess Illies	small scones
10	Poor:	  Tmprobable:	  Tmprobable:	Poor:
10				small stones
i				wetness
i		i		
3	  Fair:	Improbable:	Improbable:	Poor:
i		excess fines	excess fines	too sandy
i	shrink-swell			
i	wetness	i	i	i
	,	i	i	i
į				
2	  Fair:	  Improbable:	Improbable:	Poor:
   2 	  Fair:   wetness	Improbable:   excess fines	Improbable:	Poor: small stones
		wetness     12	wetness   excess fines	wetness   excess fines   excess fines

Table 21.--Construction Materials--Continued

Map symbol and	Percent	Roadfill	Sand	Gravel	Topsoil
component name	map unit	ROAGIIII	Janu	Glavei	lopsoii
111: Hangaard	90   	  Poor:  wetness	  Probable	  Probable	Poor:   small stones   too sandy   wetness
Deerwood	5	  Poor:   wetness 	  Probable 	  Improbable:   too sandy 	Poor:   small stones   too sandy   wetness
Rushlake	3   	  Fair:   wetness 	Probable	Probable	Poor: area reclaim small stones too sandy
Rosewood	2   2 	  Poor:   wetness 	  Probable   	  Improbable:   too sandy	Poor:   too sandy   wetness
116: Redby	   85 	  Fair:   wetness	  Probable 	  Improbable:   too sandy	Poor:   too sandy
Cormant	8   	  Poor:   wetness	  Probable	  Improbable:   too sandy	Poor:   too sandy   wetness
Hiwood	   6 	  Fair:   wetness	  Probable 	Improbable:   too sandy	Poor:   too sandy
Leafriver	1	  Poor:   wetness   	  Probable   	Improbable:   too sandy	Poor:   too sandy   wetness
117: Cormant	   85 	Poor:   wetness	Probable	Improbable:   too sandy	Poor:   too sandy   wetness
Leafriver	   7 	  Poor:   wetness	  Probable 	  Improbable:   too sandy	Poor:   too sandy   wetness
Epoufette	3   	  Poor:   wetness 	Probable	Probable	Poor:   area reclaim   small stones   too sandy
Redby	3	  Fair:   wetness	Probable	Improbable:   too sandy	Poor:
Grygla, depressional	2	Poor:   wetness	Improbable:   excess fines	Improbable:   excess fines	Poor:   too sandy   wetness
133: Dalbo	   85 	  Poor:   low strength	  Improbable:   excess fines	  Improbable:   excess fines	  Poor:   too clayey
Mustinka	   10 	  Poor:   low strength   wetness	Improbable:	Improbable:   excess fines	Poor:   thin layer   wetness

Table 21.--Construction Materials--Continued

Map symbol and	Percent of	Roadfill	Sand	Gravel	Topsoil
component name	map unit				
.33:					
Moranville	5	Poor:	  Improbable:	  Improbable:	Poor:
MOTAIIVITIE	, ,	low strength	excess fines	excess fines	too sandy
		IOW SCIENGEN	excess lines	excess lines	coo sandy
45:					
Enstrom	85	Fair:	Improbable:	Improbable:	Poor:
		shrink-swell	excess fines	excess fines	too sandy
İ		wetness			<u> </u>
			j	į	j
Grygla	10	Poor:	Improbable:	Improbable:	Poor:
		wetness	excess fines	excess fines	too sandy
					wetness
Redby	4	Fair:	Probable	Improbable:	Poor:
		wetness		too sandy	too sandy
			ļ.	ļ	
Pelan	1	Fair:	Improbable:	Improbable:	Poor:
		wetness	excess fines	excess fines	small stones
			ļ	ļ	too sandy
			ļ		
47:	0.5	   Barara	   Tana a a b   3   7	 	I Daniel
Spooner	85	Poor:	Improbable:	Improbable:	Poor:
		wetness	excess fines	excess fines	wetness
Baudette	_	   <del>                                   </del>	T	Tours and a halo a	   Badas
Baudette	5	Fair:   wetness	Improbable:   excess fines	Improbable: excess fines	Fair:
		wethess	excess lines	excess lines	too clayey
Grygla	5	Poor:	  Improbable:	  Improbable:	Poor:
GIYGIA	, ,	wetness	excess fines	excess fines	too sandy
		wechess	excess lines	excess lines	wetness
					wechess
Sago	5	Poor:	Improbable:	Improbable:	Poor:
		wetness	excess fines	excess fines	too sandy
					wetness
İ					İ
.58B:					İ
Zimmerman	85	Good	Probable	Improbable:	Poor:
				too sandy	too sandy
Hiwood	6	Fair:	Probable	Improbable:	Poor:
		wetness		too sandy	too sandy
			Į.	ļ	[
Two Inlets	6	Good	Probable	Probable	Poor:
					area reclaim
					small stones
					too sandy
Redby	3	Fair:	Probable	Improbable:	Poor:
		wetness		too sandy	too sandy
67D :					
.67B:	0.5	   Endma	  Temperature	  Tmmwshsh1 -	   Roder:
Baudette	85	Fair:	Improbable:	Improbable:	Fair:
		wetness	excess fines	excess fines	too clayey
Spooner	10	  Poor:	  Improbable:	  Tmprobable:	  Poor:
phooner	10	wetness	excess fines	Improbable:   excess fines	wetness
		werness	evcess Illies	evcess Illies	wechess
Moranville	5	Poor:	  Improbable:	  Improbable:	  Poor:
7701 am A T T T G	, J	low strength	excess fines	excess fines	too sandy
		10# Screnden	CACCOD LINES	CACCOD LINES	cco sandy
87:					
67: Haug	90	Poor:	  Improbable:	  Improbable:	Poor:
				excess fines	
		wetness	excess fines		wetness

Table 21.--Construction Materials--Continued

	Percent				
Map symbol and component name	of map unit	Roadfill	Sand	Gravel	Topsoil
187:	 				
Percy	5	Poor:	Improbable:   excess fines	Improbable:   excess fines	Poor:   wetness
Cathro	   3 	Poor:   wetness	  Improbable:   excess fines	Improbable:   excess fines	  Poor:   thin layer   wetness
Boash	   2 	  Poor:   wetness	  Improbable:   excess fines	  Improbable:   excess fines	  Poor:   too clayey   wetness
191: Epoufette	   85 	Poor:   wetness	  Probable	Probable	Poor: area reclaim small stones too sandy
Cormant	   5 	  Poor:   wetness	  Probable   	  Improbable:   too sandy	  Poor:   too sandy   wetness
Leafriver	   5 	  Poor:   wetness	  Probable   	  Improbable:   too sandy	  Poor:   too sandy   wetness
Meehan	   5 	  Fair:   wetness	  Probable 	  Improbable:   too sandy 	Poor:   too sandy   too acid
202: Meehan	     85 	  Fair:   wetness	  Probable	  Improbable:   too sandy	Poor:   too sandy   too acid
Cormant	   8 	  Poor:   wetness	  Probable 	  Improbable:   too sandy	  Poor:   too sandy   wetness
Wurtsmith	   5 	  Good 	  Probable 	  Improbable:   too sandy	  Poor:   too sandy
Leafriver	2   2	   Poor:   wetness	  Probable 	  Improbable:   too sandy	Poor:   too sandy   wetness
205: Karlstad	   85   	  Fair:   wetness	  Probable 	  Probable	Poor:   area reclaim   small stones   too sandy
Sahkahtay	   7   	   Poor:   wetness	  Probable   	  Probable   	Poor:   area reclaim   small stones   too sandy
Marquette	   5   	  Good   	  Probable   	Probable	Poor:   area reclaim   small stones   too sandy

Table 21.--Construction Materials--Continued

Map symbol and component name	Percent of map unit	   Roadfill 	Sand	Gravel	Topsoil
205:     Redby	2	  Fair:	  Probable	  Improbable:	  Poor:
Redby	2	wetness		too sandy	too sandy
Pits, gravel	1	 			
j	_				
242B:	0.5		  Decabable	Duchahla	   Danes:
Marquette    	85	Good    -	Probable	Probable	Poor:   area reclaim   small stones   too sandy
Karlstad	14	Fair:   wetness	Probable	  Probable 	Poor:   area reclaim   small stones   too sandy
Pits, gravel	1	 			
280:		 			1
Pelan	85	  Fair:   wetness 	  Improbable:   excess fines	  Improbable:   excess fines	Poor:   small stones   too sandy
Strandquist	10	  Poor:   wetness	  Improbable:   excess fines	  Improbable:   excess fines	Poor:   small stones   wetness
Garnes	3	  Fair:   wetness	Improbable:   excess fines	  Improbable:   excess fines	  Poor:   small stones
Marquette	1	Good	Probable	Probable	Poor:   area reclaim   small stones   too sandy
Pits, gravel	1				
379 <b>:</b>		 			
Percy, very cobbly	90	Poor:   wetness	Improbable:   excess fines	Improbable:   excess fines	Poor:   wetness
Boash	3	Poor:   wetness	Improbable:   excess fines	Improbable:   excess fines	Poor:   too clayey   wetness
Strandquist	3	Poor:   wetness	Improbable:   excess fines	Improbable:   excess fines	Poor:   small stones   wetness
Haug	2	  Poor:   wetness	Improbable:   excess fines	Improbable:   excess fines	Poor:   wetness
Skagen, very cobbly	2	Fair:   wetness	Improbable:   excess fines	Improbable:   excess fines	Fair:   small stones
Percy	90	Poor:	  Improbable:   excess fines	  Improbable:   excess fines	Poor:
Boash	3	Poor:   wetness	Improbable:   excess fines	  Improbable:   excess fines	  Poor:   too clayey   wetness

Table 21.--Construction Materials--Continued

Man gymbol and	Percent of	   Roadfill	Sand	Gravel	Topsoil
Map symbol and component name	map unit	!	Sand	Gravei	Topsoil
Compositor industry		<u> </u> 	1		1
83:		İ	į	İ	İ
Strandquist	3	Poor:	Improbable:	Improbable:	Poor:
		wetness	excess fines	excess fines	small stones
İ		İ			wetness
i					i
Haug	2	Poor:	Improbable:	Improbable:	Poor:
		wetness	excess fines	excess fines	wetness
i		İ			i
Skagen	2	Fair:	Improbable:	Improbable:	Fair:
		wetness	excess fines	excess fines	small stones
i		İ			i
84:					i
Percy, depressional	85	Poor:	Improbable:	Improbable:	Poor:
		wetness	excess fines	excess fines	wetness
i		İ			i
Haug	7	Poor:	Improbable:	Improbable:	Poor:
-	i	wetness	excess fines	excess fines	wetness
Percy	5	Poor:	Improbable:	Improbable:	Poor:
-	· ·	wetness	excess fines	excess fines	wetness
					""
Boash	l   3	Poor:	  Improbable:	  Improbable:	Poor:
	i	wetness	excess fines	excess fines	too clayey
					wetness
		 			#6611655
87:		 			
Roliss, depressional	85	Poor:	Improbable:	Improbable:	Poor:
doplossional	00	low strength	excess fines	excess fines	wetness
		wetness	CREEDS TIMES	CREEDS TIMES	WCCIICBB
		#6611688			
Haug	10	Poor:	Improbable:	Improbable:	Poor:
iaug	1 10	wetness	excess fines	excess fines	wetness
		wechess	excess lines	excess lines	wechess
Roliss	l 5	Poor:	  Improbable:	Improbable:	Poor:
	, J	low strength	excess fines	excess fines	wetness
		wetness	CREEDS TIMES	CREEDS TIMES	WCCIICDD
		wechess			
04:		 			
Chilgren	l 85	Poor:	Improbable:	Improbable:	Poor:
	03	wetness	excess fines	excess fines	small stones
		wechess	excess lines	excess lines	wetness
		 			wechess
Garnes	l   5	  Fair:	  Improbable:	Improbable:	Poor:
Jaines	, ,	raii:   wetness	excess fines	excess fines	small stones
		wechess	excess lines	excess lines	SMail Scolles
Grygla	   5	  Poor:	  Tmprobable:	  Improbable:	Poort
ar \argue{A} =	ı ə I	!	Improbable:	· -	Poor:   too sandy
		wetness	excess fines	excess fines	too sandy   wetness
		 		I I	wechess
Have .		   Dooma	  Temperature	  Tmmm=h=h1 -	  Peers
Haug	5	Poor:	Improbable:	Improbable:	Poor:
		wetness	excess fines	excess fines	wetness
12 -		 			
12:	l 05	   Danes	Town makes 3: 3 :	Tours and a 3-3-4	l Danne
Mavie	85	Poor:	Improbable:	Improbable:	Poor:
		wetness	excess fines	excess fines	small stones
					too sandy
					wetness
Foxhome	5	Fair:	Improbable:	Improbable:	Poor:
		wetness	excess fines	excess fines	small stones
			ļ.		
			The second secon	1	Dane.
Northwood	5	Poor:	Improbable:	Improbable:	Poor:
Northwood	5	Poor:   wetness	Improbable:   excess fines	excess fines	thin layer

Table 21.--Construction Materials--Continued

Map symbol and component name	Percent of map unit	   Roadfill	Sand	Gravel	Topsoil
component name	map and	<u>                                     </u>			
12:			j	j	j
Percy, very cobbly	5	Poor:	Improbable:	Improbable:	Poor:
I		wetness	excess fines	excess fines	wetness
32:	0.5	   Danasi	Toursele als I a .	Town walk alb 1 a .	l Danner
Strandquist	85	Poor:	Improbable:	Improbable:	Poor:
		wetness	excess fines	excess fines	small stones
		 			wetness
Percy, very cobbly	5	  Poor:	  Improbable:	  Improbable:	  Poor:
elcy, very combigation	, ,	wetness	excess fines	excess fines	wetness
			CACCODD TIMED	CACCODD TIMES	Weenebb
Haug	4	Poor:	Improbable:	Improbable:	Poor:
j		wetness	excess fines	excess fines	wetness
İ			į	į	į
Boash	3	Poor:	Improbable:	Improbable:	Poor:
		wetness	excess fines	excess fines	too clayey
I				!	wetness
	_				
Foxhome	3	Fair:	Improbable:	Improbable:	Poor:
		wetness	excess fines	excess fines	small stones
		 	I		I I
33: Syrene, depressional	85	  Poor:	  Probable	  Improbable:	  Poor:
pyrene, depressionar	0.3	wetness	LIONADIE	too sandy	small stones
		wechess		too sandy	too sandy
		 		l I	wetness
		 			wechess
  Deerwood	5	Poor:	Probable	  Improbable:	Poor:
		wetness		too sandy	small stones
			i		too sandy
i					wetness
i			į		İ
Rosewood	5	Poor:	Probable	Improbable:	Poor:
		wetness		too sandy	too sandy
I					wetness
Syrene	5	Poor:	Probable	Improbable:	Poor:
		wetness		too sandy	small stones
					too sandy
		  -			wetness
25.		 	I		I I
35: Syrene	85	  Poor:	  Probable	  Improbable:	  Poor:
		wetness	FIODADIE	too sandy	small stones
		"ecmess		coo sandy	too sandy
		1 			wetness
Rosewood	5	Poor:	Probable	Improbable:	Poor:
i		wetness	j	too sandy	too sandy
i			į	į	wetness
i					1
Syrene, depressional	5	Poor:	Probable	Improbable:	Poor:
I		wetness		too sandy	small stones
I					too sandy
I			ļ.	ļ.	wetness
!					
Karlsruhe	3	Fair:	Probable	Probable	Poor:
		wetness			small stones
	•			 	  Posterior
Deerwood	2	Poor:	Probable	Improbable:	Poor:
		wetness		too sandy	small stones
				I	too sandy
		i	i i	1	wetness

Table 21.--Construction Materials--Continued

Map symbol and component name	Percent of map unit	Roadfill	   Sand	   Gravel	   Topsoil 
			ļ.	!	
439: Strathcona	   85 	  Poor:   wetness	  Improbable:   excess fines	  Improbable:   excess fines	  Poor:   thin layer   wetness
Northwood	5	Poor:	  Improbable:   excess fines	  Improbable:   excess fines	  Poor:   thin layer
Percy	     5	Poor:	    Improbable:   excess fines	  Improbable:   excess fines	wetness    Poor:   wetness
Grimstad	3	Fair: wetness	  Improbable:   excess fines	  Improbable:   excess fines	Poor: too sandy
Strandquist	2   	Poor:   wetness	Improbable:   excess fines	  Improbable:   excess fines	  Poor:   small stones   wetness
481: Kratka	     85	Poor:   wetness	  Improbable:   excess fines	  Improbable:   excess fines	  Poor:   thin layer   wetness
Northwood	5	Poor:   wetness	  Improbable:   excess fines	  Improbable:   excess fines	Poor:   thin layer   wetness
Percy	5	Poor: wetness	  Improbable:   excess fines	  Improbable:   excess fines	  Poor:   wetness
Enstrom	3	Fair: shrink-swell wetness	  Improbable:   excess fines	  Improbable:   excess fines	  Poor:   too sandy
Strandquist	2   	Poor: wetness	  Improbable:   excess fines	  Improbable:   excess fines	  Poor:   small stones   wetness
482: Grygla	     85	  Poor:   wetness	    Improbable:   excess fines	    Improbable:   excess fines	  Poor:   too sandy
Chilgren	     5	Poor:	    Improbable:   excess fines	    Improbable:   excess fines	wetness    Poor:   small stones
Grygla, depressional	5	Poor:	    Improbable:   excess fines	    Improbable:   excess fines	wetness    Poor:   too sandy
Enstrom	3	    Fair:	    Improbable:	    Improbable:	wetness     Poor:
		shrink-swell wetness	excess fines	excess fines	too sandy 
Northwood	2	  Poor:   wetness	Improbable:   excess fines	Improbable:   excess fines	Poor:   thin layer   wetness

Table 21.--Construction Materials--Continued

Map symbol and component name	Percent of map unit	Roadfill	Sand	Gravel	Topsoil
532: Sago	90	Poor: wetness	  Improbable:   excess fines	  Improbable:   excess fines	  Poor:   too sandy   wetness
Cathro	5	Poor: wetness	  Improbable:   excess fines	  Improbable:   excess fines	  Poor:   thin layer   wetness
Zippel	5	Poor: wetness	  Improbable:   excess fines	  Improbable:   excess fines	  Poor:   too sandy   wetness
734: 	90	Poor: wetness	  Improbable:   excess humus	  Improbable:   excess humus	  Poor:   excess humus   wetness
Bullwinkle	4	Poor: wetness	  Improbable:   excess humus	  Improbable:   excess humus	  Poor:   excess humus   wetness
   Dora    	3	Poor: low strength shrink-swell wetness	  Improbable:   excess fines	  Improbable:   excess fines	  Poor:   excess humus   wetness
Tawas	3	Poor: wetness	  Probable 	  Improbable:   too sandy	Poor:   excess humus   wetness
540:   Seelyeville  	90	Poor: wetness	  Improbable:   excess humus	  Improbable:   excess humus	  Poor:   excess humus   wetness
   Cathro  	4	Poor: wetness	  Improbable:   excess fines	  Improbable:   excess fines	  Poor:   thin layer   wetness
  Dora    	3	Poor: low strength shrink-swell wetness	  Improbable:   excess fines	  Improbable:   excess fines	  Poor:   excess humus   wetness
Markey	3	Poor: wetness	  Probable 	  Improbable:   too sandy 	  Poor:   excess humus   wetness
541: Rifle	90	Poor: wetness	  Improbable:   excess humus	  Improbable:   excess humus	  Poor:   excess humus   wetness
Tacoosh	10	Poor: wetness	  Improbable:   excess humus	  Improbable:   excess humus	  Poor:   excess humus   wetness
43: Markey	90	Poor: wetness	  Probable	  Improbable:   too sandy	  Poor:   excess humus   wetness

Table 21.--Construction Materials--Continued

Map symbol and	Percent of	   Roadfill	Sand	Gravel	Topsoil
component name	map unit	ROAGIIII	Sand	Graver	lopsoii
					İ
343:					
Cormant	5	Poor:	Probable	Improbable:	Poor:
		wetness		too sandy	too sandy
					wetness
Seelyeville	   5	  Poor:	  Improbable:	  Improbable:	  Poor:
20017011110	J	wetness	excess humus	excess humus	excess humus
	 	wethess	excess number	excess numus	wetness
	İ		j	j	Ì
44:			 	 	
Cathro	90	Poor:	Improbable:	Improbable:	Poor:
	 	wetness	excess fines	excess fines	thin layer wetness
			j	İ	j
Percy, very cobbly	4	Poor:	Improbable:	Improbable:	Poor:
	 	wetness	excess fines	excess fines	wetness
Grygla	   3	  Poor:	  Improbable:	  Improbable:	  Poor:
		wetness	excess fines	excess fines	too sandy
	İ				wetness
Coolmanilla		Poor:	Two wob = b l = :	  Tmnmohchle:	Poom
Seelyeville	3	1	Improbable:	Improbable:	Poor:
	 	wetness 	excess humus	excess humus	excess humus wetness
	İ		į	į	į
46: Lupton	   90	  Poor:	  Improbable:	  Improbable:	  Poor:
парсоп	<del>3</del> 0	low strength	excess humus	excess humus	excess humus
	l I	wetness	excess numus	excess numus	wetness
	 	wechess			wechess
Bullwinkle	4	Poor:	Improbable:	Improbable:	Poor:
		wetness	excess humus	excess humus	excess humus
					wetness
Dora	   3	  Poor:	  Improbable:	  Improbable:	  Poor:
	İ	low strength	excess fines	excess fines	excess humus
	! 	shrink-swell	0110000 121100	0110000 111100	wetness
	 	wetness			wethers
			į		į
Tawas	3	Poor:	Probable	Improbable:	Poor:
	 	wetness	l I	too sandy	excess humus
	! 	[ 			wechess
347:	ĺ			İ	į
Deerwood	90	Poor:	Probable	Improbable:	Poor:
		wetness		too sandy	small stones
					too sandy
	  -				wetness
Markey	   4	  Poor:	  Probable	  Improbable:	  Poor:
•	İ	wetness		too sandy	excess humus
	İ	İ	j	j	wetness
Rosewood	3	Poor:	Probable	Improbable:	Poor:
	 	wetness	l I	too sandy	too sandy wetness
	 	 			"0011688
	3	Poor:	Probable	Improbable:	Poor:
Syrene			1	too sandy	small stones
Syrene		wetness	!	coo sandy	
Syrene	 	wetness		coo sandy	too sandy wetness

Table 21.--Construction Materials--Continued

Map symbol and component name	Percent of map unit	Roadfill	Sand	Gravel	Topsoil
550: Dora	90	Poor: low strength shrink-swell wetness	  Improbable:   excess fines	Improbable:   excess fines	Poor:   excess humus   wetness
Boash	4	  Poor:   wetness	  Improbable:   excess fines	  Improbable:   excess fines	  Poor:   too clayey   wetness
Seelyeville	3	Poor:   wetness	Improbable:   excess humus	  Improbable:   excess humus	Poor:   excess humus   wetness
Woodslake	3	Poor:   low strength   shrink-swell   wetness	Improbable:   excess fines	Improbable:   excess fines	Poor:  too clayey  wetness
561: Bullwinkle	90	  Poor:   wetness	  Improbable:   excess humus	  Improbable:   excess humus	  Poor:   excess humus   wetness
Lupton	4	Poor: low strength wetness	  Improbable:   excess humus	  Improbable:   excess humus	  Poor:   excess humus   wetness
Northwood, wooded	4	  Poor:   wetness	Improbable:   excess fines	  Improbable:   excess fines	  Poor:   thin layer   wetness
Chilgren	2	  Poor:   wetness	  Improbable:   excess fines	  Improbable:   excess fines	  Poor:   small stones   wetness
563: Northwood	90	  Poor:   wetness	  Improbable:   excess fines	  Improbable:   excess fines	  Poor:   thin layer   wetness
Grygla	4	  Poor:   wetness	  Improbable:   excess fines	  Improbable:   excess fines	  Poor:   too sandy   wetness
Berner	3	  Poor:   wetness	  Improbable:   excess humus	  Improbable:   excess humus	  Poor:   excess humus   wetness
Strandquist	3	  Poor:   wetness	  Improbable:   excess fines	  Improbable:   excess fines	  Poor:   small stones   wetness
565: Eckvoll	85	Fair: low strength shrink-swell wetness	  Improbable:   excess fines	Improbable:   excess fines	Poor:   too sandy
Chilgren	5	  Poor:   wetness	  Improbable:   excess fines	  Improbable:   excess fines	  Poor:   small stones   wetness

Table 21.--Construction Materials--Continued

Map symbol and	Percent   of	Roadfill	Sand	Gravel	Topsoil
component name	map unit	<u> </u>	1		1
65:	 				l I
Grygla	5	Poor:	Improbable:	Improbable:	Poor:
	İ	wetness	excess fines	excess fines	too sandy
	İ		į	j	wetness
Hiwood	   5	  Fair:	   Dwahahla	Twowahahlas	Doom
HIWOOd	) <b>&gt;</b>	rair:   wetness	Probable	Improbable:	Poor:
	 	wetness		too sandy	too sandy
68:	! 				
Zippel	85	Poor:	Improbable:	Improbable:	Poor:
		wetness	excess fines	excess fines	too sandy
					wetness
Augsburg, depressional	   5	  Poor:	  Improbable:	  Improbable:	  Poor:
gsburg, depressional		low strength	excess fines	excess fines	wetness
	! 	shrink-swell	CACCOD LINES	CACCOD LINES	"Coness
	 	wetness			
	ĺ		İ	į	į
Sago	5	Poor:	Improbable:	Improbable:	Poor:
	 	wetness	excess fines	excess fines	too sandy
	 		 		wetness
Skime	   5	  Fair:	Probable	  Improbable:	Poor:
		wetness	j	too sandy	too sandy
			!	!	!
i69:	   0F	Poor:	Tmmmohchle:	Two wob chile:	Doom
Wabanica	85 	Poor:   wetness	Improbable:   excess fines	Improbable:   excess fines	Poor:
	 	werness	excess fines	excess fines	wetness
Warroad	6	Poor:	Improbable:	Improbable:	Poor:
		low strength	excess fines	excess fines	too sandy
		wetness			wetness
Sax	   4	Poor:	  Improbable:	  Improbable:	  Poor:
Sax	<del>*</del> 	wetness	excess fines	excess fines	wetness
	! 				
Grano	3	Poor:	Improbable:	Improbable:	Poor:
		low strength	excess fines	excess fines	too clayey
		shrink-swell			wetness
	 	wetness			
Enstrom	   2	  Fair:	  Improbable:	  Improbable:	Poor:
	. – 	shrink-swell	excess fines	excess fines	too sandy
	İ	wetness	j	j	i
T.O.					
70: Faunce	   85	  Good	  Probable	  Improbable:	  Poor:
- umce	03			too sandy	area reclaim
	! 			coo bandy	small stones
	İ		j		too sandy
					[
Clearriver	7	Fair:	Probable	Improbable:	Poor:
	 	wetness	 	too sandy	small stones
	 		 		too sandy
Zimmerman	4	Good	Probable	Improbable:	Poor:
	ĺ		j	too sandy	too sandy
Meehan	3	Fair:	Probable	Improbable:	Poor:
		wetness		too sandy	too sandy
	 		 		too acid
Pits, gravel	   1				
, 3	-		!	1	1

Table 21.--Construction Materials--Continued

	Percent				
Map symbol and component name	of map unit	Roadfill	Sand	Gravel	Topsoil
81:			l I	l I	l I
Percy	90	Poor:   wetness	Improbable:	Improbable:	Poor:
Haug	5	Poor:   wetness	Improbable:   excess fines	Improbable:   excess fines	Poor:
Boash	3	Poor:   wetness	Improbable:   excess fines	Improbable:   excess fines	Poor: too clayey wetness
Skagen	2	  Fair:   wetness	  Improbable:   excess fines	  Improbable:   excess fines	  Fair:   small stones
882: Roliss	85	Poor: low strength wetness	  Improbable:   excess fines	  Improbable:   excess fines	  Poor:   wetness
Roliss, depressional	7	Poor: low strength wetness	  Improbable:   excess fines	Improbable:   excess fines	  Poor:   wetness
Boash	5	Poor:   wetness	Improbable:   excess fines	Improbable:   excess fines	Poor:   too clayey   wetness
Haug	3	Poor:   wetness	  Improbable:   excess fines	  Improbable:   excess fines	Poor:   wetness
883: Nereson	85	Fair: wetness	  Improbable:   excess fines	  Improbable:   excess fines	  Poor:   small stones
Percy	10	Poor:   wetness	  Improbable:   excess fines	  Improbable:   excess fines	Poor:   wetness
Pelan	3	Fair:   wetness	Improbable:   excess fines	Improbable:   excess fines	  Poor:   small stones   too sandy
Foxhome	2	  Fair:   wetness	  Improbable:   excess fines	  Improbable:   excess fines	  Poor:   small stones
527: Tawas	90	Poor: wetness	  Probable 	  Improbable:   too sandy	  Poor:   excess humus   wetness
Leafriver	4	  Poor:   wetness	  Probable 	  Improbable:   too sandy	  Poor:   too sandy   wetness
Lupton	4	Poor: low strength wetness	  Improbable:   excess humus	  Improbable:   excess humus	Poor:   excess humus   wetness
Cormant	2	Poor: wetness	  Probable 	  Improbable:   too sandy	Poor:   too sandy   wetness

Table 21.--Construction Materials--Continued

Map symbol and	Percent of	Roadfill	Sand	Gravel	Topsoil
component name	map unit	ROADIIII	Sand	Gravei	Topsoil
		<u> </u>	i	İ	İ
330: Wildwood	90	  Poor:	  Improbable:	  Improbable:	  Poor:
WIIGWOOD	90	low strength	excess fines	excess fines	too clayey
		shrink-swell	excess lines	excess lines	wetness
		wetness			wethess
			į		į
Boash	4	Poor:	Improbable:	Improbable:	Poor:
		wetness	excess lines	excess lines	too clayey
					wechess
Dora	4	Poor:	Improbable:	Improbable:	Poor:
		low strength	excess fines	excess fines	excess humus
		shrink-swell			wetness
		wetness			
Espelie	2	Poor:	  Improbable:	  Improbable:	Poor:
İ		low strength	excess fines	excess fines	small stones
		shrink-swell			too clayey
		wetness			wetness
43:					
Huot	85	Poor:	Improbable:	Improbable:	Fair:
		low strength	excess fines	excess fines	small stones
		shrink-swell			thin layer
Thiefriver	12	  Poor:	  Improbable:	  Improbable:	  Poor:
		low strength	excess fines	excess fines	wetness
		shrink-swell	j	į	į
		wetness	į	į	į
Redby	3	  Fair:	  Probable	  Improbable:	  Poor:
New y	3	wetness		too sandy	too sandy
			j		i
44: Boash	0.5	   Dane:	  Tourneleable	Tournels ab las	
Boasn	85	Poor:   wetness	Improbable:   excess fines	Improbable:   excess fines	Poor:   too clayey
		wethess	excess lines	excess lines	wetness
			į	į	į
Percy	7	Poor:	Improbable:	Improbable:	Poor:
		wetness	excess fines	excess fines	wetness
Woodslake	5	Poor:	  Improbable:	Improbable:	Poor:
İ		low strength	excess fines	excess fines	too clayey
İ		shrink-swell			wetness
		wetness			
Strandquist	3	Poor:	  Improbable:	  Improbable:	  Poor:
-		wetness	excess fines	excess fines	small stones
			İ	į	wetness
45:					
Espelie	85	Poor:	  Improbable:	  Improbable:	Poor:
i		low strength	excess fines	excess fines	small stones
į		shrink-swell			too clayey
		wetness			wetness
Grano	5	  Poor:	  Improbable:	  Improbable:	  Poor:
	-	low strength	excess fines	excess fines	too clayey
		shrink-swell			wetness
		wetness	İ		
77.7	-	   Danier	Tong make 3.3.	Two walks 3.3 s	Page
Hilaire	5	Poor:	Improbable:   excess fines	Improbable:   excess fines	Poor:
		low strength shrink-swell	excess lines	excess lines	small stones   too sandy
		PHITHY DWETT	!	!	coo sandy

Table 21.--Construction Materials--Continued

	Percent			_	
Map symbol and component name	of map unit	Roadfill	Sand	Gravel	Topsoil
645: Wildwood	5	  Poor:   low strength   shrink-swell   wetness	  Improbable:   excess fines	  Improbable:   excess fines	Poor:   too clayey   wetness
651: Thiefriver	     85 	  Poor:   low strength   shrink-swell   wetness	  Improbable:   excess fines	  Improbable:   excess fines	  Poor:   wetness
Grano	   5 	  Poor:   low strength   shrink-swell   wetness	  Improbable:   excess fines	  Improbable:   excess fines	Poor:   too clayey   wetness
Huot	   5 	  Poor:   low strength   shrink-swell	Improbable:   excess fines	  Improbable:   excess fines	  Fair:   small stones   thin layer
Wildwood	5	Poor:   low strength   shrink-swell   wetness	Improbable:   excess fines	Improbable:   excess fines	Poor:   too clayey   wetness
708: Rushlake	   85 	  Fair:   wetness   	  Probable	  Probable	Poor:   area reclaim   small stones   too sandy
Corliss	6   	  Good   	  Probable   	  Improbable:   thin layer 	Poor:   area reclaim   small stones   too sandy
Redby	5	  Fair:   wetness	  Probable	  Improbable:   too sandy	  Poor:   too sandy
Hangaard	3	  Poor:   wetness 	Probable	Probable	Poor:   small stones   too sandy   wetness
Pits, gravel	1				
712: Rosewood	   85 	  Poor:   wetness	  Probable 	  Improbable:   too sandy	Poor:   too sandy   wetness
Deerwood	6	  Poor:   wetness 	Probable	Improbable:   too sandy	Poor:   small stones   too sandy   wetness
Hangaard	5   	  Poor:   wetness   	Probable	Probable	Poor:   small stones   too sandy   wetness
Ulen	   4 	  Fair:   wetness 	  Improbable:   thin layer	  Improbable:   too sandy	  Poor:   too sandy

Table 21.--Construction Materials--Continued

Map symbol and component name	Percent of map unit	Roadfill	Sand	Gravel	   Topsoil
721B: Corliss	     85 	Good	  Probable 	  Improbable:   thin layer	  Poor:   area reclaim   small stones   too sandy
Rushlake	   10 	Fair: wetness	  Probable 	  Probable 	Poor:   area reclaim   small stones   too sandy
Hangaard	<b>4</b>   	Poor: wetness	Probable	Probable	Poor:   small stones   too sandy   wetness
Pits, gravel	1				
33: Berner	90 	Poor: wetness	  Improbable:   excess humus	Improbable:   excess humus	Poor:   excess humus   wetness
Grygla	5	Poor: wetness	  Improbable:   excess fines	Improbable:   excess fines	Poor:   too sandy   wetness
Seelyeville	5   5	Poor: wetness	  Improbable:   excess humus	  Improbable:   excess humus	Poor:   excess humus   wetness
37: Mahkonce	     85	Poor:	  Improbable:   excess fines	  Improbable:   excess fines	  Poor:   too clayey
Auganaush	10	Poor: low strength wetness	  Improbable:   excess fines	Improbable:   excess fines	Poor:   too clayey   wetness
Eckvoll	5   	Fair: low strength shrink-swell wetness	Improbable:   excess fines	Improbable:   excess fines	Poor:   too sandy
755: Woodslake	85 	Poor: low strength shrink-swell wetness	  Improbable:   excess fines	  Improbable:   excess fines	Poor:   too clayey   wetness
Boash	   8 	Poor:   wetness	  Improbable:   excess fines	  Improbable:   excess fines	Poor:   too clayey   wetness
Wildwood	5	Poor: low strength shrink-swell wetness	Improbable:   excess fines	Improbable:	Poor:   too clayey   wetness
Dora	   2 	Poor:   low strength   shrink-swell   wetness	  Improbable:   excess fines	  Improbable:   excess fines	Poor:   excess humus   wetness

Table 21.--Construction Materials--Continued

Map symbol and	Percent of	Roadfill	Sand	Gravel	Topsoil
component name	map unit	<u> </u>			
I C P					
67:	l l 90	  Poor:	Tour walkala	  Tourseleable:	  Perent
Auganaush	J 90		Improbable:   excess fines	Improbable:	Poor:
		low strength	excess fines	excess fines	too clayey
		wetness			wetness
Mustinka	l l 5	  Poor:	Tmnmahahla	Two wob abla	  Poor:
Mustinka	) <b>5</b>		Improbable:   excess fines	Improbable:   excess fines	!
		low strength	excess fines	excess fines	thin layer
		wetness		l i	wetness
Wildwood	l l 3	  Poor:	  Improbable:	  Improbable:	  Poor:
WIIGWOOG	5	low strength	excess fines	excess fines	too clayey
		shrink-swell	excess lines	excess lines	wetness
			l I	l I	wechess
		wetness			l I
Mahkonce	l   2	  Poor:	  Improbable:	  Improbable:	Poor:
	, <b>4</b>	low strength	excess fines	excess fines	too clayey
		10w screngen	evcess rines	evcess IIIIes	coo crayey
94:		İ			
Clearriver	85	  Fair:	Probable	  Improbable:	Poor:
-	i	wetness		too sandy	small stones
					too sandy
		İ	i		ccc banay
Hiwood	7	Fair:	Probable	Improbable:	Poor:
		wetness		too sandy	too sandy
			i		
Meehan	5	Fair:	Probable	Improbable:	Poor:
		wetness	i	too sandy	too sandy
		i		i	too acid
		i		i	į
Faunce	3	Good	Probable	Improbable:	Poor:
		İ		too sandy	area reclaim
			İ		small stones
		! 			too sandy
		İ		i	
002:		i		i	
Fluvaquents, frequently		i		i	
flooded	90	Poor:	Probable	Improbable:	Poor:
		wetness		too sandy	wetness
		i		i	į
Seelyeville	6	Poor:	Improbable:	Improbable:	Poor:
-		wetness	excess humus	excess humus	excess humus
					wetness
Hapludalfs	2	Poor:	Improbable:	Improbable:	Poor:
		slope	excess fines	excess fines	slope
					thin layer
Water	2				
030:		!	ļ	ļ.	
Pits, gravel	75				
		!	ļ	ļ.	
	20	Poor:	Probable	Probable	Poor:
Udipsamments		slope		Ţ	slope
Udipsamments			i i	I	too sandy
Udipsamments	 	İ	I	I	
Udipsamments		 			į
	     2	    Good	    Probable	  Improbable:	  Poor:
-	     2	    Good	    Probable 	  Improbable:   thin layer	1
Udipsamments	     2 	    Good 	  Probable 		  Poor:   area reclaim   small stones

Table 21.--Construction Materials--Continued

Map symbol and component name	Percent of map unit	   Roadfill	   Sand 	   Gravel 	   Topsoil 
1030: Karlstad	2	  Fair:   wetness 	    Probable   	    Probable   	  Poor:   area reclaim   small stones   too sandy
Hangaard	1	   Poor:   wetness	  Probable   	  Probable   	  Poor:   small stones   too sandy   wetness
1031: Seelyeville, ponded	90	  Poor:   wetness	  Improbable:   excess humus	  Improbable:   excess humus	  Poor:   excess humus   wetness
Cathro	4	Poor:   wetness	  Improbable:   excess fines 	  Improbable:   excess fines 	  Poor:   thin layer   wetness
Dora	3	  Poor:   low strength   shrink-swell   wetness	  Improbable:   excess fines 	  Improbable:   excess fines   	  Poor:   excess humus   wetness
Markey	3	Poor:   wetness	  Probable   	  Improbable:   too sandy 	  Poor:   excess humus   wetness
1067: Fluvaquents, frequently flooded	60	    Poor:   wetness	      Probable 	      Improbable:   too sandy	      Poor:   wetness
Hapludalfs	30	Poor:   slope	  Improbable:   excess fines	Improbable:   excess fines	Poor:   slope   thin layer
Seelyeville	5	  Poor:   wetness	  Improbable:   excess humus	  Improbable:   excess humus	  Poor:   excess humus   wetness
Water	5	 	 	 	 
1133B: Skime	85	  Fair:   wetness	  Probable	  Improbable:   too sandy	  Poor:   too sandy
Hiwood	10	  Fair:   wetness	  Probable 	  Improbable:   too sandy	  Poor:   too sandy
Zippel	5	  Poor:   wetness	  Improbable:   excess fines	  Improbable:   excess fines	  Poor:   too sandy   wetness
1134: Borup	     55	    Poor:	    Improbable:	    Improbable:	    Poor:
-		wetness	excess fines	excess fines	wetness
Glyndon	35	Fair:   wetness	Improbable:   excess fines	Improbable:   excess fines 	Fair:   thin layer 

Table 21.--Construction Materials--Continued

Map symbol and component name	Percent of map unit	   Roadfill	   Sand	   Gravel	   Topsoil
1134: Augsburg, depressional	     5 	Poor:   low strength   shrink-swell   wetness	  Improbable:   excess fines 	  Improbable:   excess fines	  Poor:   wetness
Skime	   5 	  Fair:   wetness	  Probable 	Improbable:   too sandy	  Poor:   too sandy
1144: Strathcona, depressional	   45 	  Poor:   wetness	  Improbable:   excess fines	  Improbable:   excess fines	Poor:   too sandy   wetness
Kratka, depressional	   45 	  Poor:   wetness 	  Improbable:   excess fines	  Improbable:   excess fines	  Poor:   thin layer   wetness
Kratka	   5 	  Poor:   wetness 	  Improbable:   excess fines	  Improbable:   excess fines	  Poor:   thin layer   wetness
Northwood	   5 	  Poor:   wetness 	  Improbable:   excess fines	  Improbable:   excess fines	  Poor:   thin layer   wetness
1154:	 	 			
Sax	90	Poor:   wetness	Improbable:   excess fines	Improbable:	Poor:
Wabanica	   5 	  Poor:   wetness	  Improbable:   excess fines	  Improbable:   excess fines	  Poor:   wetness
Cathro	   3 	  Poor:   wetness	  Improbable:   excess fines	  Improbable:   excess fines	  Poor:   thin layer   wetness
Woodslake	   2   	Poor:  low strength  shrink-swell  wetness	Improbable:   excess fines	Improbable:   excess fines	Poor:   too clayey   wetness
1158:	 				
Skagen	85   	Fair:   wetness	Improbable:   excess fines	Improbable:   excess fines	Fair:   small stones
Percy	10	Poor:   wetness	Improbable:   excess fines	Improbable:	Poor:
Foxhome	   5 	  Fair:   wetness	  Improbable:   excess fines	  Improbable:   excess fines	  Poor:   small stones
1170: Skagen, very cobbly	     85 	  Fair:   wetness	  Improbable:   excess fines	  Improbable:   excess fines	  Fair:   small stones
Percy, very cobbly	   10 	  Poor:   wetness	  Improbable:   excess fines	Improbable:   excess fines	Poor:   wetness
Foxhome	   5 	  Fair:   wetness 	  Improbable:   excess fines	  Improbable:   excess fines	  Poor:   small stones

Table 21.--Construction Materials--Continued

Map symbol and component name	Percent   of   map unit	   Roadfill	   Sand	   Gravel	   Topsoil
		<u> </u>			
1179B:			j	j	į
Moranville	85	Poor:	Improbable:	Improbable:	Poor:
		low strength	excess fines	excess fines	too sandy
	_				
Baudette	5	Fair:	Improbable:	Improbable:	Fair:
		wetness	excess fines	excess fines	too clayey
Hiwood	l   5	  Fair:	Probable	  Improbable:	Poor:
	İ	wetness		too sandy	too sandy
Spooner	5	Poor:	Improbable:	Improbable:	Poor:
		wetness	excess fines	excess fines	wetness
181:					
Rosewood	50	Poor:	Probable	Improbable:	Poor:
		wetness		too sandy	too sandy
					wetness
**1	10	   Tadas	Tomorah chili	Town on the St. T. c.	l Doom :
Ulen	40	Fair:	Improbable:	Improbable:	Poor:
		wetness	thin layer	too sandy	too sandy
Redby	l   5	  Fair:	  Probable	  Improbable:	Poor:
		wetness		too sandy	too sandy
					SSS Samay
Deerwood	3	Poor:	Probable	Improbable:	Poor:
		wetness		too sandy	small stones
			į	i	too sandy
			j	į	wetness
			j	į	j
Syrene	2	Poor:	Probable	Improbable:	Poor:
		wetness		too sandy	small stones
					too sandy
					wetness
182:		   December			
Warroad	85	Poor:	Improbable:   excess fines	Improbable:   excess fines	Poor:
		low strength wetness	excess fines	excess fines	too sandy wetness
		wethess			wechess
Wabanica	7	Poor:	  Improbable:	  Improbable:	Poor:
		wetness	excess fines	excess fines	wetness
Enstrom	5	Fair:	Improbable:	Improbable:	Poor:
		shrink-swell	excess fines	excess fines	too sandy
		wetness			
Sax	3	Poor:	Improbable:	Improbable:	Poor:
		wetness	excess fines	excess fines	wetness
105					
187:		l Danne		Town on the Children	Para
Dora, ponded	90	Poor:   low strength	Improbable: excess fines	Improbable: excess fines	Poor:
		shrink-swell	excess lines	excess lines	wetness
		wetness			Mecness
Seelyeville, ponded	4	Poor:	  Improbable:	  Improbable:	Poor:
2 ·	· -	wetness	excess humus	excess humus	excess humus
				İ	wetness
			j	į	İ
Wildwood	4	Poor:	Improbable:	Improbable:	Poor:
		low strength	excess fines	excess fines	too clayey
		shrink-swell			wetness
		wetness			
			1	1	I

Table 21.--Construction Materials--Continued

Map symbol and	Percent   of	Roadfill	Sand	Gravel	Topsoil
component name	map unit	1	1	1	1
1187:	  -	 			
Boash	   2	  Poor:	  Improbable:	  Improbable:	  Poor:
	 	wetness	excess fines	excess fines	too clayey
	 	 			wechess
l191: Sahkahtay	   85	  Poor:	  Probable	  Probable	  Poor:
bankancay	05	wetness			area reclaim
			İ	İ	small stones
					too sandy
Cormant	   5	  Poor:	Probable	  Improbable:	  Poor:
	İ	wetness	j	too sandy	too sandy
					wetness
Deerwood	   5	Poor:	Probable	  Improbable:	  Poor:
		wetness		too sandy	small stones
					too sandy
	 	[ 			wetness
Karlstad	3	Fair:	Probable	Probable	Poor:
		wetness			area reclaim
	 	 	l I	 	small stones too sandy
	 	 			coo banay
Redby	2	Fair:	Probable	Improbable:	Poor:
	 	wetness		too sandy	too sandy
.206:					İ
Cormant	55	Poor:	Probable	Improbable:	Poor:
	 	wetness		too sandy	too sandy wetness
					j
Redby	35	Fair:   wetness	Probable	Improbable:	Poor:
	 	wethess		too sandy	too sandy
Hiwood	5	Fair:	Probable	Improbable:	Poor:
	 	wetness		too sandy	too sandy
Leafriver	   5	Poor:	Probable	  Improbable:	Poor:
		wetness	İ	too sandy	too sandy
	 	 			wetness
.214:	 				İ
Mustinka	90	Poor:	Improbable:	Improbable:	Poor:
	 	low strength wetness	excess fines	excess fines	thin layer wetness
	İ				
Espelie	4	Poor:	Improbable:	Improbable:	Poor:
	 	low strength shrink-swell	excess fines	excess fines	small stones   too clayey
	 	wetness			wetness
Wildwood	   4	Poort	  Tmnrohable:	  Tmprobable:	  Poor:
MTTGMOOG	4± 	Poor:   low strength	Improbable: excess fines	Improbable:	Poor:   too clayey
		shrink-swell			wetness
	ĺ	wetness	į	İ	į
Dalbo	   2	  Poor:	  Improbable:	  Improbable:	  Poor:
	ı <b>4</b>	low strength	excess fines	excess fines	too clayey
	i i				

Table 21.--Construction Materials--Continued

Map symbol and	Percent of	Roadfill	Sand	Gravel	Topsoil
component name	map unit				
1274B:					
Redby	40	Fair:	Probable	  Improbable:	Poor:
kedby	1 40	wetness	FIODADIE	too sandy	too sandy
l l		wechess		coo sandy	coo sandy
Hiwood	30	Fair:	Probable	  Improbable:	Poor:
HIWOOd	] 30	wetness	FIODADIE	: -	too sandy
l l	l	wethess	l I	too sandy	too sandy
Leafriver, wooded	   15	Poor:	  Probable	Tmnmohahla	Poor:
healilvel, wooded	1 13	wetness	FIODADIE	Improbable:   too sandy	too sandy
l I		wechess		coo sandy	wetness
l I					wechess
Clearriver	5	Fair:	Probable	Improbable:	Poor:
Cleariver	3	wetness	I TODADIE	too sandy	small stones
ļ.		wechess		coo sandy	too sandy
l I					coo sandy
   Cormant	l   5	Poor:	Probable	Tmnmohahla	Poor:
Colmanc	, ,	wetness	FIODADIE	Improbable:	
l l		wechess		too sandy	too sandy wetness
l l			l I		wetness
  Zimmerman	l I 5	Good	  Probable	  Tmnrohahla:	  Poor:
Zimmerman	) <b>3</b>	Good	Prodable	Improbable:	
 	l I		I I	too sandy	too sandy
1298:					
	l l 90	D	  Tournabable:	  Tournabable:	  Deem:
Borup	J 90	Poor:	Improbable:   excess fines	Improbable:   excess fines	Poor:
	l	wetness	excess lines	excess fines	wetness
Augghung denmaggional	   3	Poor:	Tmmmobable	  Improbable:	Poor:
Augsburg, depressional	] 3	low strength	Improbable:   excess fines	excess fines	wetness
l l	l	shrink-swell	excess lines	excess lines	wechess
	l		ļ		l I
	l	wetness	ļ		l I
Glyndon		maja.	  Tournabable:	  Tournabable:	   Talan
Glyndon	3	Fair:	Improbable:	Improbable:   excess fines	Fair:
	l	wetness	excess fines	excess fines	thin layer
Come	2	Poor:	Tmmmobable	  Tmmmobable:	Poor:
Sago	4	wetness	Improbable:   excess fines	Improbable:   excess fines	
l l		wethess	excess lines	excess lines	too sandy wetness
	l		ļ		wetness
   Skime	2	Fair:	Dwohohlo	  Tmmmobable:	Doome
Skime	4		Probable	Improbable:	Poor:
	l	wetness	ļ	too sandy	too sandy
1302:			I		
			Tour or all all 1	 	l Parasi
Foldahl	85	Fair:	Improbable:	  Improbable:	  Poor:
Foldahl	   85 	low strength	  Improbable:   excess fines	  Improbable:   excess fines	  Poor:   too sandy
Foldahl	   85 	low strength shrink-swell	· -	· -	
Foldahl	85	low strength	· -	· -	
 		low strength shrink-swell wetness	excess fines	excess fines	too sandy
Foldahl	85	low strength shrink-swell wetness Poor:	excess fines	excess fines	too sandy
 		low strength shrink-swell wetness	excess fines	excess fines	Poor:
 		low strength shrink-swell wetness Poor:	excess fines	excess fines	too sandy
 	10	low strength shrink-swell wetness Poor: wetness	excess fines	excess fines	too sandy 
 		low strength shrink-swell wetness  Poor: wetness  Fair:	Excess fines	excess fines     Improbable:   excess fines   Improbable:	Poor: thin layer wetness Poor:
 	10	low strength shrink-swell wetness Poor: wetness	excess fines	excess fines	too sandy 
Kratka	10	low strength shrink-swell wetness  Poor: wetness  Fair:	Excess fines	excess fines     Improbable:   excess fines   Improbable:	Poor: thin layer wetness Poor:
Kratka	10 5	low strength shrink-swell wetness  Poor: wetness  Fair: wetness	Improbable:   cxcess fines   Improbable:   excess fines	Improbable: excess fines   Improbable: excess fines   excess fines	Poor:   thin layer   wetness   Poor:   small stones
Kratka	10	low strength shrink-swell wetness  Poor: wetness  Fair: wetness	Improbable: excess fines Improbable: excess fines Improbable:	Improbable: excess fines Improbable: excess fines Improbable:	Poor: thin layer wetness  Poor: small stones
Kratka	10 5	low strength shrink-swell wetness  Poor: wetness  Fair: wetness	Improbable:   cxcess fines   Improbable:   excess fines	Improbable: excess fines   Improbable: excess fines   excess fines	Poor:   thin layer   wetness   Poor:   small stones
Foxhome	10 5 85	low strength shrink-swell wetness  Poor: wetness  Fair: wetness  Fair: wetness	Improbable: excess fines  Improbable: excess fines  Improbable: excess fines	Improbable: excess fines  Improbable: excess fines  Improbable: excess fines	Poor:   thin layer   wetness   Poor:   small stones   Fair:   thin layer
Kratka	10 5	low strength shrink-swell wetness  Poor: wetness  Fair: wetness  Fair: wetness	Improbable: excess fines  Improbable: excess fines  Improbable: excess fines  Improbable:	Improbable: excess fines Improbable: excess fines Improbable: excess fines Improbable:	Poor: thin layer wetness  Poor: small stones  Fair: thin layer
Kratka	10 5 85	low strength shrink-swell wetness  Poor: wetness  Fair: wetness  Fair: wetness	Improbable: excess fines  Improbable: excess fines  Improbable: excess fines	Improbable: excess fines  Improbable: excess fines  Improbable: excess fines	Poor:   thin layer   wetness   Poor:   small stones   Fair:   thin layer
Foxhome	10 5 85	low strength shrink-swell wetness  Poor: wetness  Fair: wetness  Foor: wetness	Improbable: excess fines  Improbable: excess fines  Improbable: excess fines  Improbable: excess fines	Improbable: excess fines  Improbable: excess fines  Improbable: excess fines  Improbable: excess fines	Poor: thin layer wetness  Poor: small stones  Fair: thin layer  Poor: wetness
Foxhome	10 5 85	low strength shrink-swell wetness  Poor: wetness  Fair: wetness  Fair: wetness	Improbable: excess fines  Improbable: excess fines  Improbable: excess fines  Improbable:	Improbable: excess fines Improbable: excess fines Improbable: excess fines Improbable:	Poor: thin layer wetness  Poor: small stones  Fair: thin layer

Table 21.--Construction Materials--Continued

Map symbol and	Percent of	Roadfill	Sand	Gravel	Topsoil
component name	map unit				
1305:			l I		l I
Hilaire	85	Poor:	Improbable:	Improbable:	Poor:
		low strength	excess fines	excess fines	small stones
i		shrink-swell			too sandy
İ			İ	j	İ
Espelie	11	Poor:	Improbable:	Improbable:	Poor:
		low strength	excess fines	excess fines	small stones
		shrink-swell			too clayey
		wetness	l i	l I	wetness
Grano	2	Poor:	  Improbable:	  Improbable:	Poor:
		low strength	excess fines	excess fines	too clayey
i		shrink-swell			wetness
İ		wetness	į	j	j
					ļ
Redby	2	Fair:	Probable	Improbable:	Poor:
		wetness		too sandy	too sandy
1314:					i
Tacoosh	90	Poor:	Improbable:	Improbable:	Poor:
		wetness	excess humus	excess humus	excess humus
				ļ	wetness
Rifle	8	Poor:	  Improbable:	  Improbable:	  Poor:
KILIE		wetness	excess humus	excess humus	excess humus
i		wechess	excess numes	excess names	wetness
İ			į	j	Ì
Sax	2	Poor:	Improbable:	Improbable:	Poor:
		wetness	excess fines	excess fines	wetness
1316:					-
Wheatville	85	Poor:	Improbable:	Improbable:	Fair:
		low strength	excess fines	excess fines	thin layer
İ		shrink-swell	İ	j	too sandy
	1.2	<b>D</b> =	 		 
Augsburg	13	Poor: low strength	Improbable:   excess fines	Improbable:   excess fines	Poor:   wetness
		shrink-swell	excess lines	excess lines	wechess
i		wetness	İ		İ
İ			į	j	İ
Grano	2	Poor:	Improbable:	Improbable:	Poor:
		low strength	excess fines	excess fines	too clayey
		shrink-swell			wetness
		wetness		 	}
1326:			j	j	i
Augsburg, depressional	45	Poor:	Improbable:	Improbable:	Poor:
		low strength	excess fines	excess fines	wetness
		shrink-swell	ļ	į.	ļ
		wetness			
Wabanica, depressional	45	Poor:	  Improbable:	  Improbable:	  Poor:
		low strength	excess fines	excess fines	wetness
İ		wetness			
					ļ
Sax	6	Poor:	Improbable:	Improbable:	Poor:
		wetness	excess fines	excess fines	wetness
Espelie	2	Poor:	  Improbable:	  Improbable:	  Poor:
	_	low strength	excess fines	excess fines	small stones
		shrink-swell			too clayey
i		wetness	į	į	wetness
			i	i	i

Table 21.--Construction Materials--Continued

	Percent				
Map symbol and component name	of map unit	Roadfill	Sand	Gravel	Topsoil
1326: Zippel	2   	     Poor:   wetness	  Improbable:   excess fines	  Improbable:   excess fines	  Poor:   too sandy   wetness
1327B: Karlstad	65	  Fair:   wetness   	  Probable	  Probable	  Poor:   area reclaim   small stones   too sandy
Marquette	   25   	  Good   	  Probable 	  Probable 	Poor:  area reclaim  small stones  too sandy
Sahkahtay	   7 	  Poor:   wetness 	  Probable 	  Probable 	Poor:   area reclaim   small stones   too sandy
Redby	   3 	  Fair:   wetness 	  Probable 	  Improbable:   too sandy	Poor:   too sandy
1328: Northwood, wooded	   90 	  Poor:   wetness	  Improbable:   excess fines	  Improbable:   excess fines	Poor: thin layer wetness
Berner, wooded	5   5	  Poor:   wetness 	  Improbable:   excess humus	Improbable:   excess humus	Poor:   excess humus   wetness
Grygla	5   5	  Poor:   wetness 	  Improbable:   excess fines	  Improbable:   excess fines	  Poor:   too sandy   wetness
1333: Dora, wooded	90	Poor: low strength shrink-swell wetness	  Improbable:   excess fines	  Improbable:   excess fines	  Poor:   excess humus   wetness
Lupton	   4 	  Poor:   low strength   wetness	  Improbable:   excess humus	Improbable:   excess humus	Poor:   excess humus   wetness
Wildwood	4	Poor:   low strength   shrink-swell   wetness	Improbable:   excess fines	Improbable:   excess fines	Poor:   too clayey   wetness
Auganaush	2   	  Poor:   low strength   wetness	Improbable:   excess fines 	Improbable:   excess fines	Poor:   too clayey   wetness
1356: Water, miscellaneous.		 			
1399B: Two Inlets	   85   	  Good     	  Probable 	  Probable 	Poor: area reclaim small stones too sandy

Table 21.--Construction Materials--Continued

Many growth : 3 3	Percent	 	g 3	G	 
Map symbol and component name	of map unit	Roadfill	Sand	Gravel	Topsoil
L399B:		 			
Wurtsmith	6	  Good 	Probable	Improbable:	Poor:
Zimmerman	6	  Good 	Probable	Improbable:	Poor:
Meehan	3	  Fair:   wetness 	  Probable 	Improbable:   too sandy	Poor:   too sandy   too acid
401: Grygla, depressional	90	    Poor:   wetness	    Improbable:   excess fines	  Improbable:   excess fines	Poor:
		wetness	excess fines	excess fines	too sandy wetness
Northwood, wooded	   5 	  Poor:   wetness 	  Improbable:   excess fines	  Improbable:   excess fines	  Poor:   thin layer   wetness
Chilgren	   3 	  Poor:   wetness	  Improbable:   excess fines	  Improbable:   excess fines	  Poor:   small stones   wetness
Grygla	2	  Poor:   wetness	  Improbable:   excess fines	  Improbable:   excess fines	Poor:   too sandy   wetness
1400			į	į	
L402: Leafriver, wooded	   90 	  Poor:   wetness 	  Probable 	  Improbable:   too sandy	  Poor:   too sandy   wetness
Cormant	   4 	  Poor:   wetness 	  Probable   	  Improbable:   too sandy	  Poor:   too sandy   wetness
Tawas	   4 	  Poor:   wetness	  Probable   	  Improbable:   too sandy	Poor:   excess humus   wetness
Redby	2	  Fair:   wetness	  Probable 	  Improbable:   too sandy	Poor:   too sandy
404: Berner, wooded	90	  Poor:   wetness	  Improbable:   excess humus	  Improbable:   excess humus	  Poor:   excess humus   wetness
Lupton	   4 	  Poor:   low strength   wetness	  Improbable:   excess humus	  Improbable:   excess humus	Poor:   excess humus   wetness
Northwood, wooded	   4 	  Poor:   wetness	  Improbable:   excess fines	  Improbable:   excess fines	  Poor:   thin layer   wetness
Grygla	2	Poor:	  Improbable:   excess fines	  Improbable:   excess fines	Poor:   too sandy   wetness

Table 21.--Construction Materials--Continued

	Percent	 		1	
Map symbol and component name	of map unit	Roadfill	Sand	Gravel	Topsoil
1405: Lallie	90 	Poor: low strength shrink-swell wetness	  Improbable:   excess fines 	  Improbable:   excess fines 	  Poor:   excess salt   too clayey   wetness
Sax	7	Poor:   wetness	Improbable:   excess fines	Improbable:   excess fines	  Poor:   wetness
Wabanica	3	Poor: wetness	Improbable:   excess fines	Improbable:   excess fines	Poor:   wetness
1414		l I	l I		
1414: Nereson, very cobbly	   85 	   Fair:   wetness	Improbable:   excess fines	  Improbable:   excess fines	  Poor:   small stones
Percy, very cobbly	10	Poor:   wetness	Improbable:   excess fines	Improbable:   excess fines	Poor:   wetness
Pelan	3	Fair:   wetness	Improbable:   excess fines	Improbable:   excess fines	Poor:   small stones   too sandy
Foxhome	2	Fair:   wetness	Improbable:   excess fines	Improbable:   excess fines	  Poor:   small stones 
1428: Karlsruhe	   85 	  Fair:   wetness	  Probable 	  Probable 	  Poor:   small stones
Syrene	10	Poor: wetness	Probable	Improbable:   too sandy 	Poor:   small stones   too sandy   wetness
Ulen	5	Fair: wetness	Improbable:   thin layer	Improbable:   too sandy	Poor:   too sandy
1444: Wurtsmith	85	Good	  Probable	  Improbable:   too sandy	  Poor:   too sandy
Meehan	10	Fair:   wetness	Probable	Improbable:   too sandy	Poor:   too sandy   too acid
Clearriver	2	Fair:   wetness	Probable	Improbable:   too sandy	Poor:   small stones   too sandy
Two Inlets	2	Good	  Probable   	  Probable   	  Poor:   area reclaim   small stones   too sandy
Cormant	1	Poor: wetness	Probable	Improbable:   too sandy 	Poor:   too sandy   wetness
1448: Grano	90	Poor: low strength shrink-swell wetness	  Improbable:   excess fines 	  Improbable:   excess fines   	  Poor:   too clayey   wetness 

Table 21.--Construction Materials--Continued

Map symbol and	Percent of	Roadfill	Sand	   Gravel	Topsoil
component name	map unit	ROAGIIII	Sand	Graver	lopsoii
L448:					
Percy	5	Poor:	  Improbable:	  Improbable:	Poor:
reicy	3	wetness	excess fines	excess fines	wetness
Augsburg	3	Poor:	  Improbable:	  Improbable:	  Poor:
		low strength shrink-swell wetness	excess fines	excess fines	wetness
Woodslake	2	Poor: low strength shrink-swell wetness	Improbable:   excess fines	Improbable:   excess fines	Poor:   too clayey   wetness
L449:					
Grano	90	Poor:	Improbable:	Improbable:	Poor:
		low strength shrink-swell wetness	excess fines	excess fines	too clayey wetness
Percy	5	Poor:	  Improbable:	  Improbable:	  Poor:
		wetness	excess fines	excess fines	wetness
Augsburg	3	Poor: low strength shrink-swell wetness	Improbable:   excess fines	Improbable:   excess fines	Poor:   wetness
Woodslake	2	Poor:	  Improbable:	  Improbable:	  Poor:
WOOUSTAKE	2	low strength shrink-swell wetness	excess fines	excess fines	too clayey   wetness
1807:					
Cathro, ponded	90	Poor: wetness	Improbable:   excess fines 	Improbable:   excess fines 	Poor:   thin layer   wetness
Haug	4	Poor: wetness	Improbable:   excess fines	Improbable:   excess fines	Poor:   wetness
Seelyeville, ponded	4	Poor: wetness	Improbable:   excess humus	Improbable:   excess humus	Poor:   excess humus   wetness
Percy	2	Poor: wetness	Improbable:   excess fines	Improbable:   excess fines	Poor:   wetness
1808:	22	Danne	Deck - 3.3	 	  Pees:
Markey, ponded	90	Poor: wetness	Probable   	Improbable:   too sandy 	Poor:   excess humus   wetness
Leafriver	4	Poor: wetness	  Probable 	  Improbable:   too sandy	Poor:   too sandy   wetness
Seelyeville, ponded	4	Poor: wetness	  Improbable:   excess humus	  Improbable:   excess humus	  Poor:   excess humus   wetness
Cormant	2	Poor: wetness	  Probable 	  Improbable:   too sandy	  Poor:   too sandy   wetness

Table 21.--Construction Materials--Continued

Man grmb-1	Percent of	   Doc 46:11	Sand	Gravel	   m
Map symbol and component name	or map unit	Roadfill	Sand	Gravel	Topsoil
component name	map unic	<u> </u>	1		
L918:		 			
Croke	85	Poor:	Improbable:	Improbable:	Fair:
		low strength	excess fines	excess fines	thin layer
		shrink-swell			too sandy
Augsburg	13	Poor:	Improbable:	Improbable:	Poor:
i		low strength	excess fines	excess fines	wetness
i		shrink-swell	i	i	i
i		wetness			į
i			į	į	į
Grano	2	Poor:	Improbable:	Improbable:	Poor:
		low strength	excess fines	excess fines	too clayey
		shrink-swell	į	İ	wetness
İ		wetness	į	İ	į
1			]		ļ
L923B:					1
Garnes, very stony	85	Fair:	Improbable:	Improbable:	Poor:
		wetness	excess fines	excess fines	small stones
Chilgren	10	  Poor:	  Improbable:	  Improbable:	  Poor:
Chilgren	10	wetness	excess fines	excess fines	small stones
		wetness	excess lines	excess fines	small stones
		 			wetness
Eckvoll	3	  Fair:	  Improbable:	  Improbable:	Poor:
ICRV011	, ,	low strength	excess fines	excess fines	too sandy
		shrink-swell	CACCOD TINCE	CACCOD TIMES	coo banay
		wetness			
					i I
Pelan	2	Fair:	Improbable:	Improbable:	Poor:
i		wetness	excess fines	excess fines	small stones
i					too sandy
			į	į	į
.984:					
Leafriver	90	Poor:	Probable	Improbable:	Poor:
		wetness		too sandy	too sandy
					wetness
			ļ		
Cormant	5	Poor:	Probable	Improbable:	Poor:
		wetness		too sandy	too sandy
			ļ		wetness
Manisar	2	   Doom:	Dwohah 3 -	Tmmmoh = h l = :	  Booms
Markey	3	Poor:	Probable	Improbable:	Poor:
		wecness		too sandy	excess numus
		 	[		wetness
Redby	2	  Fair:	  Probable	  Improbable:	  Poor:
Nowy	_	rair:   wetness	LIONANIE	too sandy	too sandy
		"GCIIGB9		coo bandy	coo sandy
ī:			i		
Water.			i		i
		! 	i	i	1

## Table 22.--Water Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. See text for definitions of terms used in this table. Absence of an entry indicates that no rating is applicable.)

		L:	imitations for-		Features affecting				
Map symbol and component name	Percent of map unit	Pond reservoir   areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	   Drainage 	   Irrigation	Terraces and   diversions	Grassed   waterways	
47:	 		 	 					
Colvin	85	Moderate:   seepage	Severe:   wetness	Severe:   slow refill	Frost action	Wetness	Wetness	Wetness	
Bearden	   5 	  Slight   	  Severe:   wetness	  Severe:   slow refill 	  Frost action   	  Wetness   	Erodes easily   percs slowly   wetness	  Erodes easily   rooting depth	
Grano	   5 	  Slight   	  Severe:   hard to pack   wetness	  Severe:   slow refill 	  Frost action   percs slowly 	  Percs slowly   slow intake   wetness	Percs slowly   wetness	  Percs slowly   wetness	
Sax	   5   	  Moderate:   seepage   	  Severe:   piping   ponding	  Severe:   slow refill 	  Frost action   subsides   ponding	  Soil blowing   ponding   	Erodes easily   soil blowing   ponding	  Erodes easily   wetness 	
48B:		İ			İ	İ			
Hiwood	85   	Severe:   seepage 	Severe:   seepage   piping	Severe:   cutbanks cave 	Slope   cutbanks cave 	Slope   wetness   droughty	Too sandy   wetness	Droughty   	
Redby	   7   	  Severe:   seepage 	Severe:   seepage   piping   wetness	Severe:   cutbanks cave 	  Cutbanks cave     	  Fast intake   wetness   droughty 	Too sandy   wetness   soil blowing	  Droughty   	
Clearriver	   3 	  Severe:   seepage 	  Severe:   seepage 	  Severe:   cutbanks cave 	  Cutbanks cave   	  Fast intake   wetness   droughty	Too sandy   wetness   soil blowing	  Droughty   	
Cormant	3   	  Severe:   seepage 	Severe:   seepage   piping   wetness	  Severe:   cutbanks cave   	  Cutbanks cave   	  Fast intake   wetness   droughty	Too sandy   wetness   soil blowing	Wetness   droughty 	
Zimmerman	   2 	  Severe:   seepage 	  Severe:   seepage   piping	  Severe:   no water 	  Deep to water   	  Fast intake   slope   droughty	Too sandy   soil blowing	  Droughty   	

Droughty

Too sandy

wetness soil blowing

		L	imitations for-	-	Features affecting					
Map symbol and component name	Percent of map unit	Pond reservoir   areas	Embankments,   dikes, and   levees	Aquifer-fed   excavated   ponds	   Drainage 	Irrigation	Terraces and   diversions	Grassed   waterways		
52: Augsburg	     85 	  Severe:   seepage	  Severe:   hard to pack   wetness	  Severe:   slow refill   cutbanks cave	  Frost action   percs slowly	  Percs slowly   wetness	  Percs slowly   wetness	  Percs slowly   wetness		
Croke	   5 	  Severe:   seepage 	  Severe:   hard to pack 	  Severe:   slow refill   cutbanks cave	  Frost action   percs slowly	  Percs slowly   wetness	Percs slowly   wetness   soil blowing	  Percs slowly   		
Grano	   5 	  Slight   	  Severe:   hard to pack   wetness	  Severe:   slow refill 	  Frost action   percs slowly 	  Percs slowly   wetness	  Percs slowly   wetness	  Percs slowly   wetness		
Sago	   5   	  Moderate:   seepage   	  Severe:   seepage   piping   ponding	  Severe:   cutbanks cave   	  Frost action   subsides   ponding 	  Soil blowing   ponding 	Too sandy soil blowing ponding	  Wetness     		
59:	 		i i							
Grimstad	85   	Severe:   seepage	Severe:   piping   wetness	Severe:   cutbanks cave	Favorable   	Wetness   	Erodes easily   wetness   soil blowing	Erodes easily   		
Strathcona	   12 	Severe:   seepage	Severe:   piping   wetness	Severe:   slow refill   cutbanks cave	  Frost action   	Wetness   soil blowing	Wetness   soil blowing	Wetness 		
Foxhome	   3 	  Severe:   seepage	  Severe:   piping	  Severe:   cutbanks cave	  Frost action 	  Wetness   soil blowing	  Wetness   soil blowing	  Favorable 		
64:	 		I I		 					
Ulen	85   	Severe:   seepage 	Severe:   seepage   piping	Severe:   cutbanks cave	Cutbanks cave   	Wetness   droughty 	Too sandy wetness soil blowing	Droughty   		
Rosewood	   10 	  Severe:   seepage 	  Severe:   seepage   piping   wetness	  Severe:   cutbanks cave 	  Cutbanks cave   	  Wetness   droughty 	  Too sandy   wetness   soil blowing	  Wetness   droughty 		
Redby	   3 	  Severe:   seepage 		  Severe:   cutbanks cave 	  Cutbanks cave   	Fast intake   wetness   droughty	Too sandy wetness soil blowing	  Droughty   		

Severe:

cutbanks cave

Cutbanks cave | Wetness

droughty

wetness

seepage

Severe:

Severe:

seepage

Rushlake-----

Table 22.--Water Management--Continued

Table 22.--Water Management--Continued

		L:	imitations for-	-	Features affecting				
Map symbol and component name	Percent of map unit	Pond reservoir   areas	Embankments, dikes, and levees	Aquifer-fed   excavated   ponds	   Drainage 	Irrigation	Terraces and   diversions	Grassed   waterways	
65:	 	l I	 		 		l I		
Foxhome	85 	Severe:   seepage	Severe:   piping	Severe:   cutbanks cave	Frost action	Wetness   soil blowing	Wetness   soil blowing	Favorable	
Strandquist	   12 	  Moderate:   seepage 	Severe:   piping   wetness	Severe:   cutbanks cave 	  Frost action   	  Wetness   	  Erodes easily   wetness 	  Erodes easily   wetness	
Skagen	   3   	  Severe:   seepage 	  Severe:   piping 	Moderate:   slow refill   deep to water	  Frost action     	  Wetness     	  Wetness     	  Favorable   	
67:	 	İ	 		 		İ		
Bearden	85   	Slight   	Severe:   wetness	Severe:   slow refill 	Frost action   	Wetness   	Erodes easily   percs slowly   wetness	Erodes easily   rooting depth	
Colvin	   15 	  Moderate:   seepage	  Severe:   wetness	  Severe:   slow refill	  Frost action   	  Wetness   	  Wetness   	  Wetness 	
77:	İ	İ	İ	İ	j	İ	İ	İ	
Garnes	85   	Moderate:   seepage 	Severe:   piping 	Moderate:   slow refill   deep to water	Frost action   	Wetness   soil blowing 	Wetness   soil blowing 	Rooting depth	
Chilgren	   10 	  Moderate:   seepage 	  Severe:   piping   wetness	  Moderate:   slow refill 	  Frost action   	Rooting depth   wetness   soil blowing	  Wetness   soil blowing 	  Rooting depth   wetness 	
Eckvoll	3   	  Severe:   seepage 	  Moderate:   piping   wetness	Severe:   slow refill   cutbanks cave	  Frost action   	Fast intake   wetness   soil blowing	Erodes easily   wetness   soil blowing	  Erodes easily   	
Pelan	   2   	  Severe:   seepage   	  Severe:   piping 	Moderate:   slow refill   cutbanks cave   deep to water	  Favorable     	  Wetness   droughty   	  Wetness   soil blowing   	  Rooting depth   droughty   	
111:	! 		 		 				
Hangaard	90     	Severe:   seepage 	Severe:   seepage   wetness	Severe:   cutbanks cave 	Cutbanks cave     	Wetness   droughty 	Too sandy wetness soil blowing	Wetness   droughty 	

		Li	mitations for-		1	Features affecting
Map symbol and	Percent	Pond reservoir	Embankments,	Aquifer-fed	1	Terraces and
component name	of	areas	dikes, and	excavated	Drainage	Irrigation diversions
		i i	10,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	nonda	i	i i

Table 22.--Water Management--Continued

		L:	imitations for-			Features a	affecting	
Map symbol and component name	Percent of	Pond reservoir	Embankments, dikes, and	Aquifer-fed   excavated	   Drainage	   Irrigation	Terraces and   diversions	Grassed waterway
	map unit		levees	ponds				
11: Deerwood	     5	    Severe:	    Severe:	    Severe:	    Subsides	    Soil blowing	    Too sandy	    Wetness
	     	seepage	seepage   piping   ponding	cutbanks cave	ponding   cutbanks cave	ponding   	soil blowing   ponding 	     
Rushlake	3   	Severe:   seepage 	Severe:   seepage 	Severe:   cutbanks cave 	Cutbanks cave   	Wetness   droughty 	Too sandy wetness soil blowing	Droughty     
Rosewood	2     	Severe:   seepage 	Severe:   seepage   piping   wetness	Severe:   cutbanks cave   	Cutbanks cave	   droughty 	Too sandy wetness soil blowing	Wetness   droughty 
116:				[				ļ
Redby	85     	Severe:   seepage 	Severe:   seepage   piping   wetness	Severe:   cutbanks cave 		Fast intake   wetness   droughty 	Too sandy   wetness   soil blowing	Droughty     
Cormant	8     	  Severe:   seepage   	  Severe:   seepage   piping   wetness	Severe:   cutbanks cave 	  Cutbanks cave       	  Fast intake   wetness   droughty 	Too sandy wetness soil blowing	  Wetness   droughty     
Hiwood	   6 	  Severe:   seepage 	Severe:   seepage   piping	Severe:   cutbanks cave 	  Slope   cutbanks cave   	  Slope   wetness   droughty	Too sandy wetness	  Droughty   
Leafriver	1   	  Severe:   seepage   	Severe:   seepage   piping   ponding	Severe:   cutbanks cave	  Frost action   subsides   ponding 	  Soil blowing   ponding 	Too sandy   soil blowing   ponding	  Wetness     
117:	 	 				 		i I
Cormant	85     	Severe:   seepage 	Severe:   seepage   piping   wetness	Severe:   cutbanks cave 	Cutbanks cave    -   	Fast intake   wetness   droughty	Too sandy wetness soil blowing	Wetness   droughty 
Leafriver	   <b>7</b>   	  Severe:   seepage   	  Severe:   seepage   piping   ponding	  Severe:   cutbanks cave   	  Frost action   subsides   ponding 	  Soil blowing   ponding   	Too sandy soil blowing ponding	  Wetness     

Table 22.--Water Management--Continued

		L:	imitations for-		Features affecting			
Map symbol and component name	Percent of map unit	Pond reservoir   areas	Embankments, dikes, and levees	Aquifer-fed   excavated   ponds	   Drainage	   Irrigation	Terraces and   diversions	Grassed waterways
	map unit	<u> </u>	l	ponds			<u> </u>	1
117:								ì
Epoufette	3	Severe:   seepage	Severe: seepage wetness	Severe:   cutbanks cave	Frost action cutbanks cave	Fast intake   wetness   droughty	Too sandy wetness soil blowing	Wetness   droughty 
Redby	3	  Severe:   seepage 	Severe:   seepage   piping   wetness	  Severe:   cutbanks cave 	  Cutbanks cave   	  Fast intake   wetness   droughty	Too sandy wetness soil blowing	  Droughty   
Grygla, depressional	2	  Severe:   seepage 	Severe:   piping   ponding	  Severe:   slow refill   cutbanks cave	  Frost action   ponding 	  Soil blowing   ponding 	  Erodes easily   soil blowing   ponding	  Erodes easily   wetness 
133:		 						i I
Dalbo	85	Moderate:   seepage	Moderate: hard to pack wetness	Severe:   slow refill	Frost action   percs slowly	Wetness   	Erodes easily   wetness	Erodes easily
Mustinka	10	  Slight   	Severe:   wetness	  Severe:   slow refill	  Frost action   percs slowly 	  Percs slowly   wetness	  Erodes easily   wetness	  Erodes easily   percs slowly   wetness
Moranville	5	  Severe:   seepage	  Severe:   thin layer	  Severe:   slow refill   cutbanks cave	  Frost action   	  Wetness   droughty 	  Erodes easily   wetness   soil blowing	  Erodes easily   droughty 
145:		 	 		 	 		}
Enstrom	85	Severe:   seepage	Severe:   piping 	Severe:   slow refill   cutbanks cave	  Favorable   	  Wetness   droughty 	Erodes easily   wetness	Erodes easily droughty
Grygla	10	  Severe:   seepage 	Severe:   piping   wetness	Severe:   slow refill   cutbanks cave	  Frost action   	  Wetness   soil blowing 	Erodes easily   wetness   soil blowing	  Erodes easily   wetness 
Redby	4	  Severe:   seepage 	Severe:   seepage   piping   wetness	  Severe:   cutbanks cave 	  Cutbanks cave     	  Fast intake   wetness   droughty 	Too sandy wetness soil blowing	  Droughty     
Pelan	1	  Severe:   seepage 	  Severe:   piping 	  Moderate:   slow refill   cutbanks cave   deep to water	  Favorable   	  Wetness   droughty   	  Wetness   soil blowing   	  Rooting depth   droughty   

	1	L	imitations for-	_	Features affecting				
Map symbol and	Percent	Pond reservoir	Embankments,	Aquifer-fed			Terraces and	Grassed	
component name	of	areas	dikes, and	excavated	Drainage	Irrigation	diversions	waterways	
	map unit	<u> </u>	levees	ponds	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
147:	 	l I	 		 	 	1		
Spooner	   85	  Moderate:	  Severe:	Severe:	Frost action	  Erodes easily	  Erodes easily	  Erodes easily	
Spooner	03 	seepage	piping	cutbanks cave		wetness	wetness	wetness	
			wetness			soil blowing	soil blowing		
Baudette	   5	  Moderate:	  Severe:	Severe:	  Frost action	  Slope	  Erodes easily	  Erodes easily	
	İ	seepage	piping	cutbanks cave	slope	wetness	wetness	i	
	 	slope			cutbanks cave	soil blowing	soil blowing	ļ	
Grygla	   5	  Severe:	  Severe:	Severe:	  Frost action	  Wetness	  Erodes easily	  Erodes easily	
		seepage	piping	slow refill		soil blowing	wetness	wetness	
	 	[ [	wetness	cutbanks cave	 	 	soil blowing		
Sago	5	Moderate:	Severe:	Severe:	Frost action	Soil blowing	Too sandy	Wetness	
		seepage	seepage	cutbanks cave		ponding	soil blowing		
			piping		ponding		ponding		
	 	l I	ponding		 	 		1	
158B:	 		 		 	 			
Zimmerman	85	Severe:	Severe:	Severe:	Deep to water	Fast intake	Too sandy	Droughty	
		seepage	seepage	no water		slope	soil blowing		
	 	 	piping		 	droughty	 	 	
Hiwood	6	Severe:	Severe:	Severe:	Slope	Slope	Too sandy	Droughty	
		seepage	seepage	cutbanks cave	cutbanks cave	wetness	wetness		
	 	 	piping		 	droughty	 	İ	
Two Inlets	6	Severe:	Severe:	Severe:	Deep to water	  Fast intake	Too sandy	Rooting depth	
		seepage	seepage	no water		slope	soil blowing	droughty	
	 	 	 		 	droughty			
Redby	3	Severe:	Severe:	Severe:	Cutbanks cave	  Fast intake	Too sandy	Droughty	
		seepage	seepage	cutbanks cave		wetness	wetness		
			piping			droughty	soil blowing		
	  -	l I	wetness		 	 	1		
167B:	 								
Baudette	85	Moderate:	Severe:	Severe:	Frost action	Slope	Erodes easily	Erodes easily	
		seepage	piping	cutbanks cave		wetness	wetness		
	 	slope	 		cutbanks cave	soil blowing	soil blowing		
Spooner	10	  Moderate:	  Severe:	Severe:	  Frost action	  Erodes easily	Erodes easily	Erodes easily	
		seepage	piping	cutbanks cave		wetness	wetness	wetness	
			wetness			soil blowing	soil blowing		

Table 22.--Water Management--Continued

Table 22.--Water Management--Continued

		L:	Limitations for			Features affecting				
Map symbol and	Percent	Pond reservoir	Embankments,	Aquifer-fed			Terraces and	Grassed		
component name	of	areas	dikes, and	excavated	Drainage	Irrigation	diversions	waterways		
	map unit	<u> </u>	levees	ponds	<u> </u>	İ	İ	<u> </u>		
167B:										
Moranville	5	  Severe:	  Severe:	  Severe:	  Frost action	  Wetness	  Erodes easily	  Emodes essile		
MOI anville	3	seepage	thin layer	slow refill	FIOSC ACCION	droughty	wetness	droughty		
i		seepage	chin layer	cutbanks cave	 	droughty	soil blowing	droughty		
į		İ	İ	İ	İ	İ	Ì	İ		
187:										
Haug	90	Moderate:	Severe:	Moderate:	Frost action	Soil blowing	Soil blowing	Wetness		
		seepage	piping	slow refill	ponding	ponding	ponding			
		 	ponding		 	 				
Percy	5	  Moderate:	  Severe:	Moderate:	Frost action	Wetness	Wetness	Wetness		
Ī		seepage	piping	slow refill	İ	İ	i	İ		
į			wetness	į	į	į	j	į		
   Cathro	3	  Severe:	  Severe:	  Severe:	  Frost action	Soil blowing	  Soil blowing	Wetness		
		seepage	piping	slow refill	subsides	ponding	ponding			
İ			ponding		ponding					
Paralle I	•				 		 			
Boash	2	Moderate:	Severe:	Severe:	1	Percs slowly wetness	Wetness	Percs slowly wetness		
		seepage	piping   wetness	slow refill	percs slowly	wetness		wetness		
				į		į	į			
191:	85				  Frost action	 	  maa_aaadaa	Waters		
Epoufette	85	Severe:	Severe:	Severe:   cutbanks cave		Fast intake   wetness	Too sandy wetness	Wetness		
		seepage	seepage wetness	cutbanks cave	cutbanks cave	droughty	wetness   soil blowing	droughty		
			wechess		 	droughty	soil blowing			
Cormant	5	Severe:	Severe:	Severe:	Cutbanks cave	Fast intake	Too sandy	Wetness		
		seepage	seepage	cutbanks cave		wetness	wetness	droughty		
			piping			droughty	soil blowing			
		 	wetness		 	 				
Leafriver	5	Severe:	Severe:	Severe:	Frost action	Soil blowing	Too sandy	Wetness		
		seepage	seepage	cutbanks cave	subsides	ponding	soil blowing			
			piping		ponding		ponding			
			ponding							
   Meehan	5	  Severe:	  Severe:	  Severe:	  Too acid	  Fast intake	Too sandy	Wetness		
İ		seepage	seepage	cutbanks cave	cutbanks cave	wetness	wetness	droughty		
į		İ	piping	İ	İ	droughty	soil blowing	i		
į			wetness	į	į	į	ļ	ļ		
202:		 	 		 	 				
Meehan	85	Severe:	Severe:	Severe:	Too acid	Fast intake	Too sandy	Wetness		
I		seepage	seepage	cutbanks cave	cutbanks cave	wetness	wetness	droughty		
			piping			droughty	soil blowing	[		
1		I .	wetness							

Table 22.--Water Management--Continued

		L:	imitations for-	· <b>-</b>	Features affecting				
Map symbol and component name	Percent of map unit	Pond reservoir   areas	Embankments, dikes, and levees	Aquifer-fed   excavated   ponds	   Drainage 	   Irrigation 	Terraces and   diversions	Grassed   waterways	
02:		 	 		 	 	}		
Cormant	8	Severe:   seepage	Severe:   seepage   piping   wetness	Severe:   cutbanks cave	Cutbanks cave   	Fast intake   wetness   droughty	Too sandy   wetness   soil blowing	Wetness   droughty 	
Wurtsmith    	5	  Severe:   seepage 	  Severe:   seepage   piping	Severe:   cutbanks cave	  Deep to water   	  Fast intake   droughty 	Too sandy   soil blowing	  Droughty   	
Leafriver      	2	  Severe:   seepage   	   Severe:   seepage   piping   ponding	Severe:   cutbanks cave 	  Frost action   subsides   ponding 	  Soil blowing   ponding   	Too sandy   soil blowing   ponding	  Wetness     	
05:						ì	ì		
Karlstad    	85	Severe:   seepage 	Severe:   seepage   piping	Severe:   cutbanks cave	Cutbanks cave	Fast intake   wetness   droughty	Large stones too sandy wetness	Large stones   droughty 	
Sahkahtay	7	  Severe:   seepage 	  Severe:   seepage   wetness	Severe:   cutbanks cave	  Cutbanks cave   	  Wetness   droughty 	Too sandy   wetness   soil blowing	  Wetness   droughty 	
Marquette	5	  Severe:   seepage 	  Severe:   seepage 	Severe:   no water	  Deep to water   	  Fast intake   slope   droughty	Too sandy   soil blowing	  Droughty   	
Redby	2	  Severe:   seepage 	Severe:   seepage   piping   wetness	Severe:   cutbanks cave	  Cutbanks cave     	  Fast intake   wetness   droughty 	Too sandy   wetness   soil blowing	  Droughty     	
Pits, gravel	1	   	   		   	   		   	
42B:		!	!	ļ	!	ļ	Ţ	[	
Marquette    	85	Severe:   seepage 	Severe:   seepage 	Severe:   no water	Deep to water	Fast intake   slope   droughty	Too sandy soil blowing	Droughty   	
Karlstad	14	  Severe:   seepage 	Severe:   seepage   piping	Severe:   cutbanks cave	  Cutbanks cave   	Fast intake   wetness   droughty	Large stones too sandy wetness	  Large stones   droughty 	
		I	I	1	I	1	1	1	

Table 22.--Water Management--Continued

		L:	imitations for-	-		Features a	ffecting	
Map symbol and component name	Percent of map unit	Pond reservoir   areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	   Drainage 	   Irrigation 	Terraces and diversions	Grassed   waterways
280: Pelan	     85	    Severe:	    Severe:	    Moderate:	    Favorable	    Wetness	    Wetness	    Rooting depth
		seepage	piping   	slow refill   cutbanks cave   deep to water	 	droughty	soil blowing	droughty
Strandquist	   10 	Moderate:   seepage 	Severe:   piping   wetness	Severe:   cutbanks cave 	  Frost action   	  Wetness   	Erodes easily   wetness	  Erodes easily   wetness 
Garnes	   3 	  Moderate:   seepage 	  Severe:   piping 	Moderate:   slow refill   deep to water	  Frost action   	Wetness   soil blowing	Wetness   soil blowing	  Rooting depth   
Marquette	     	Severe:   seepage 	  Severe:   seepage 	Severe:   no water 	  Deep to water   	Fast intake   slope   droughty	Too sandy   soil blowing	Droughty   
Pits, gravel	1   1		   		   		 	
379:	İ	İ	İ	j	İ	İ	İ	İ
Percy, very cobbly	90	Moderate:   seepage 	Severe:   piping   wetness	Moderate:   slow refill	Frost action   	Wetness   	Wetness   	Wetness   
Boash	   3   	  Moderate:   seepage 	Severe:   piping   wetness	Severe:   slow refill	  Frost action   percs slowly 	Percs slowly   wetness	  Wetness   	Percs slowly   wetness
Strandquist	   3 	Moderate:   seepage 	  Severe:   piping   wetness	Severe:   cutbanks cave 	  Frost action   	  Wetness   	Erodes easily   wetness	  Erodes easily   wetness 
Haug	   2 	Moderate:   seepage 	Severe:   piping   ponding	Moderate:   slow refill 	  Frost action   ponding 	Soil blowing   ponding 	Soil blowing   ponding 	  Wetness   
Skagen, very cobbly	   2   	Severe:   seepage	  Severe:   piping 	Moderate:   slow refill   deep to water	  Frost action   	  Wetness   	  Wetness   	  Favorable   
383: Percy	90	  Moderate:   seepage	  Severe:   piping   wetness	  Moderate:   slow refill	  Frost action   	  Wetness 	  Wetness 	  Wetness 

Table 22.--Water Management--Continued

		L:	imitations for-	-		Features a	ffecting	
Map symbol and component name	Percent of map unit	Pond reservoir   areas	Embankments, dikes, and levees	Aquifer-fed   excavated   ponds	   Drainage 	   Irrigation 	Terraces and diversions	Grassed   waterways
383:	 		 					
Boash	3	  Moderate:   seepage	Severe:   piping   wetness	Severe:   slow refill	  Frost action   percs slowly	Percs slowly   wetness	Wetness	Percs slowly   wetness
Strandquist	   3 	  Moderate:   seepage 	  Severe:   piping   wetness	  Severe:   cutbanks cave	  Frost action 	  Wetness   	  Erodes easily   wetness	  Erodes easily   wetness
Haug	   2 	  Moderate:   seepage	  Severe:   piping   ponding	  Moderate:   slow refill	  Frost action   ponding	  Soil blowing   ponding	  Soil blowing   ponding 	  Wetness   
Skagen	   2 	  Severe:   seepage 	  Severe:   piping	  Moderate:   slow refill   deep to water	  Frost action   	  Wetness   	  Wetness   	  Favorable   
384:		 				 		
Percy, depressional	85   	Moderate:   seepage	Severe:   piping   ponding	Moderate:   slow refill	Frost action   ponding	Ponding   	Ponding	Wetness   
Haug	   7 	  Moderate:   seepage 	  Severe:   piping   ponding	  Moderate:   slow refill	  Frost action   ponding 	  Soil blowing   ponding 	  Soil blowing   ponding	  Wetness   
Percy	   5 	  Moderate:   seepage 	  Severe:   piping   wetness	  Moderate:   slow refill	  Frost action   	  Wetness   	  Wetness 	  Wetness   
Boash	   3 	  Moderate:   seepage 	  Severe:   piping   wetness	  Severe:   slow refill 	  Frost action   percs slowly 	  Percs slowly   wetness 	  Wetness   	  Percs slowly   wetness 
387:								
Roliss, depressional	85   	Moderate:   seepage 	Severe:   piping   ponding	Severe:   slow refill	Frost action   ponding 	Ponding   	Ponding   	Wetness   
Haug	   10 	  Moderate:   seepage 	  Severe:   piping   ponding	  Moderate:   slow refill	  Frost action   ponding	  Soil blowing   ponding 	  Soil blowing   ponding	  Wetness   
Roliss	   5 	  Moderate:   seepage 	  Severe:   piping   wetness	  Severe:   slow refill 	  Frost action   	  Wetness   	  Wetness   	  Wetness   

Table 22.--Water Management--Continued

		L:	imitations for-	-	Features affecting				
Map symbol and component name	Percent of map unit	Pond reservoir   areas	Embankments, dikes, and levees	Aquifer-fed   excavated   ponds	   Drainage 	   Irrigation	Terraces and diversions	Grassed   waterways	
404: Chilgren	     85   	    Moderate:   seepage   	  Severe:   piping   wetness	    Moderate:   slow refill   	    Frost action   	  Rooting depth   wetness   soil blowing	    Wetness   soil blowing   	    Rooting depth   wetness   	
Garnes	5   	  Moderate:   seepage	Severe:   piping	  Moderate:   slow refill   deep to water	  Frost action   	Wetness   soil blowing	  Wetness   soil blowing	Rooting depth	
Grygla	   5 	  Severe:   seepage 	Severe:   piping   wetness	  Severe:   slow refill   cutbanks cave	  Frost action     	Wetness   soil blowing	  Erodes easily   wetness   soil blowing	  Erodes easily   wetness 	
Haug	   5   	  Moderate:   seepage   	Severe:   piping   ponding	  Moderate:   slow refill 	  Frost action   ponding   	Soil blowing   ponding	  Soil blowing   ponding 	  Wetness   	
412:									
Mavie	85   	Severe:   seepage 	Severe:   piping   wetness	Severe:   slow refill   cutbanks cave	Frost action	Wetness   soil blowing   droughty	Erodes easily   wetness   soil blowing	Erodes easily   wetness   droughty	
Foxhome	   5 	  Severe:   seepage	  Severe:   piping	Severe:   cutbanks cave	  Frost action 	  Wetness   soil blowing	  Wetness   soil blowing	  Favorable 	
Northwood	   5 	  Severe:   seepage 	Severe:   piping   ponding	  Severe:   cutbanks cave 	  Frost action   subsides   ponding	Rooting depth   soil blowing   ponding	  Erodes easily   soil blowing   ponding	  Erodes easily   rooting dept   wetness	
Percy, very cobbly	   5   	  Moderate:   seepage   	   Severe:   piping   wetness	  Moderate:   slow refill 	  Frost action     	Wetness	  Wetness     	  Wetness   	
432: Strandquist	   85 	  Moderate:   seepage	Severe: piping wetness	  Severe:   cutbanks cave	  Frost action   	  Wetness 	  Erodes easily   wetness	  Erodes easily   wetness	
Percy, very cobbly	   5 	  Moderate:   seepage	Severe: piping wetness	  Moderate:   slow refill	  Frost action   	  Wetness 	  Wetness   	  Wetness   	

Table 22.--Water Management--Continued

		L:	imitations for-	· <del>-</del>	Features affecting				
Map symbol and component name	Percent of map unit	Pond reservoir   areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	   Drainage 	   Irrigation 	Terraces and   diversions	Grassed   waterways	
432:		 	 		 	 			
Haug	4	Moderate:   seepage	Severe:   piping   ponding	Moderate:   slow refill	Frost action   ponding 	Soil blowing   ponding 	Soil blowing   ponding 	Wetness   	
Boash	3	  Moderate:   seepage 	Severe:   piping   wetness	Severe:   slow refill	  Frost action   percs slowly 	  Percs slowly   wetness 	  Wetness   	  Percs slowly   wetness	
Foxhome	3	  Severe:   seepage	  Severe:   piping	Severe:   cutbanks cave	  Frost action   	  Wetness   soil blowing	  Wetness   soil blowing	  Favorable 	
433:			 			 	1		
Syrene, depressional	85	Severe:   seepage	Severe:   seepage   ponding	Severe:   cutbanks cave	Ponding   cutbanks cave 	Soil blowing   ponding   droughty	Erodes easily   too sandy   ponding	Erodes easily   wetness   droughty	
Deerwood	5	  Severe:   seepage 	Severe:   seepage   piping   ponding	Severe:   cutbanks cave	  Subsides   ponding   cutbanks cave	Soil blowing   ponding 	Too sandy   soil blowing   ponding	  Wetness   	
Rosewood	5	  Severe:   seepage 	  Severe:   seepage   piping   wetness	  Severe:   cutbanks cave 	  Cutbanks cave     	  Wetness   droughty   	Too sandy wetness soil blowing	  Wetness   droughty   	
Syrene	5	  Severe:   seepage 	  Severe:   seepage   wetness	Severe:   cutbanks cave		  Wetness   soil blowing   droughty	Erodes easily   too sandy   wetness	  Erodes easily   wetness   droughty	
435:		 	 		 	 	1		
Syrene	85	Severe:   seepage	Severe:   seepage   wetness	Severe:   cutbanks cave	Cutbanks cave	Wetness   soil blowing   droughty	Erodes easily   too sandy   wetness	Erodes easily   wetness   droughty	
Rosewood	5	  Severe:   seepage 	Severe:   seepage   piping   wetness	Severe:   cutbanks cave 	1	  Wetness   droughty   	Too sandy   wetness   soil blowing	  Wetness   droughty 	
Syrene, depressional	5	  Severe:   seepage 	  Severe:   seepage   ponding	  Severe:   cutbanks cave	  Ponding   cutbanks cave 	  Soil blowing   ponding   droughty	  Erodes easily   too sandy   ponding	  Erodes easily   wetness   droughty	

Table 22.--Water Management--Continued

		L:	imitations for-	-		Features a	ffecting	
Map symbol and component name	Percent of map unit	Pond reservoir   areas	Embankments, dikes, and levees	Aquifer-fed   excavated   ponds	   Drainage	   Irrigation	Terraces and   diversions	Grassed waterways
	map unit	1	levees	ponds	<u> </u>	1	<u> </u>	<u> </u>
435:		 			 	 	 	
Karlsruhe	3	Severe:	Severe:	Severe:	Cutbanks cave	Wetness	Too sandy	Droughty
j		seepage	seepage	cutbanks cave	İ	soil blowing	wetness	
			wetness			droughty	soil blowing	
Deerwood	2	  Severe:	  Severe:	  Severe:	  Subsides	  Soil blowing	Too sandy	Wetness
		seepage	seepage	cutbanks cave	ponding	ponding	soil blowing	İ
			piping		cutbanks cave		ponding	
			ponding					
439:		 			 	 	 	
Strathcona	85	Severe:	Severe:	Severe:	Frost action	Wetness	Wetness	Wetness
		seepage	piping	slow refill		soil blowing	soil blowing	
			wetness	cutbanks cave				
Northwood	5	  Severe:	Severe:	Severe:	  Frost action	Rooting depth	  Erodes easily	  Erodes easily
		seepage	piping	cutbanks cave	subsides	soil blowing	soil blowing	rooting dept
			ponding		ponding	ponding	ponding	wetness
Percy	5	  Moderate:	  Severe:	  Moderate:	  Frost action	  Wetness	  Wetness	Wetness
		seepage	piping	slow refill	İ	İ	Ì	İ
			wetness					
Grimstad	3	  Severe:	Severe:	Severe:	  Favorable	  Wetness	  Erodes easily	  Erodes easily
		seepage	piping	cutbanks cave	İ	j	wetness	İ
			wetness				soil blowing	
Strandquist	2	  Moderate:	  Severe:	  Severe:	  Frost action	  Wetness	  Erodes easily	  Erodes easily
_		seepage	piping	cutbanks cave	İ	j	wetness	wetness
			wetness					
481:		 			 	 	 	
Kratka	85	Severe:	Severe:	Severe:	Favorable	Wetness	Erodes easily	Erodes easily
		seepage	piping	slow refill		soil blowing	wetness	wetness
		 	wetness	cutbanks cave	 	droughty	soil blowing	droughty
Northwood	5	  Severe:	  Severe:	Severe:	  Frost action	Rooting depth	Erodes easily	  Erodes easily
İ		seepage	piping	cutbanks cave	subsides	soil blowing	soil blowing	rooting dept
			ponding		ponding	ponding	ponding	wetness
Percy	5	  Moderate:	  Severe:	  Moderate:	  Frost action	  Wetness	Wetness	Wetness
j		seepage	piping	slow refill			[	
		I	wetness	1	1	I	1	1

		L:	imitations for-	-		Features a	ffecting	
Map symbol and		Pond reservoir		Aquifer-fed	ļ 	ļ	Terraces and	Grassed
component name	of map unit	areas	dikes, and levees	excavated ponds	Drainage	Irrigation	diversions	waterways
481:	 	l I	 		 	l I		
Enstrom	3	Severe:   seepage 	Severe:   piping 	Severe:   slow refill   cutbanks cave	Favorable   	Wetness   droughty 	Erodes easily   wetness	Erodes easily   droughty 
Strandquist	   2   	  Moderate:   seepage   	  Severe:   piping   wetness	Severe:   cutbanks cave	  Frost action     	  Wetness     	  Erodes easily   wetness 	  Erodes easily   wetness   
182:								
Grygla	85   	Severe:   seepage 	Severe:   piping   wetness	Severe:   slow refill   cutbanks cave	Frost action   	Wetness   soil blowing 	Erodes easily   wetness   soil blowing	Erodes easily   wetness 
Chilgren	   5 	  Moderate:   seepage 	  Severe:   piping   wetness	  Moderate:   slow refill 	  Frost action   	Rooting depth   wetness   soil blowing	  Wetness   soil blowing 	  Rooting depth   wetness 
Grygla, depressional	   5 	  Severe:   seepage 	Severe:   piping   ponding	Severe:   slow refill   cutbanks cave	  Frost action   ponding 	  Soil blowing   ponding 	Erodes easily   soil blowing   ponding	  Erodes easily   wetness 
Enstrom	   3 	  Severe:   seepage	  Severe:   piping	  Severe:   slow refill   cutbanks cave	  Favorable   	  Wetness   droughty 	  Erodes easily   wetness	  Erodes easily   droughty 
Northwood	   2 	  Severe:   seepage	  Severe:   piping   ponding	  Severe:   cutbanks cave 	  Frost action   subsides   ponding	  Rooting depth   soil blowing   ponding	  Erodes easily   soil blowing   ponding	  Erodes easily   rooting dept   wetness
532:		 	 		 	 		
Sago	90	Moderate:   seepage 	Severe:   seepage   piping   ponding	Severe:   cutbanks cave 	Frost action   subsides   ponding	Soil blowing   ponding 	Too sandy soil blowing ponding	Wetness     
Cathro	   5 	  Severe:   seepage 	  Severe:   piping   ponding	  Severe:   slow refill 	  Frost action   subsides   ponding	  Soil blowing   ponding 	  Soil blowing   ponding 	  Wetness   
Zippel	   5 	  Severe:   seepage 	  Severe:   piping   wetness	  Severe:   cutbanks cave 	  Frost action   cutbanks cave 	  Wetness   	  Erodes easily   wetness   soil blowing	  Erodes easily   wetness 

Table 22.--Water Management--Continued

Table 22.--Water Management--Continued

		L	imitations for-	-	Features affecting				
Map symbol and component name	Percent of map unit	Pond reservoir   areas	Embankments, dikes, and levees	Aquifer-fed   excavated   ponds	   Drainage 	   Irrigation 	Terraces and   diversions	Grassed   waterways	
534: Mooselake	     90 	    Severe:   seepage	  Severe:   excess humus   wetness	    Moderate:   slow refill	    Frost action   subsides	    Wetness   	    Wetness   	    Wetness   	
Bullwinkle	   <b>4</b> 	  Severe:   seepage 	  Severe:   excess humus   wetness	  Severe:   slow refill 	  Frost action   subsides 	  Wetness   soil blowing 	  Wetness   soil blowing 	  Wetness   	
Dora	   3 	  Severe:   seepage 	  Severe:   hard to pack   ponding	  Severe:   slow refill 	  Percs slowly   subsides   ponding	  Percs slowly   soil blowing   ponding	Percs slowly   soil blowing   ponding	  Percs slowly   wetness 	
Tawas	3     	  Severe:   seepage   	  Severe:   seepage   piping   wetness	Severe:   slow refill   cutbanks cave	  Frost action   subsides   cutbanks cave 	  Wetness   soil blowing   	Too sandy   wetness   soil blowing	  Wetness     	
540:									
Seelyeville	90	Severe:   seepage	Severe:   excess humus   ponding	Severe:   slow refill	Frost action   subsides   ponding	Soil blowing   ponding 	Soil blowing   ponding 	Wetness   	
Cathro	   <b>4</b> 	  Severe:   seepage	Severe:   piping   ponding	  Severe:   slow refill 	  Frost action   subsides   ponding	  Soil blowing   ponding 	Soil blowing   ponding	  Wetness   	
Dora	   3 	  Severe:   seepage	Severe:   hard to pack   ponding	  Severe:   slow refill 	  Percs slowly   subsides   ponding	  Percs slowly   soil blowing   ponding	Percs slowly   soil blowing   ponding	  Percs slowly   wetness	
Markey	   3   	  Severe:   seepage   	  Severe:   seepage   piping   ponding	  Severe:   slow refill   cutbanks cave 	  Frost action   subsides   ponding 	  Soil blowing   ponding   	  Too sandy   soil blowing   ponding 	  Wetness     	
541:									
Rifle	90	Severe:   seepage	Severe:   excess humus   ponding	Moderate:   slow refill	Frost action   ponding 	Ponding   	Ponding   	Wetness   	
Tacoosh	   10   	  Severe:   seepage 	  Severe:   excess humus   ponding	  Severe:   slow refill 	  Frost action   subsides   ponding	  Ponding     	  Ponding     	  Wetness     	

Component name	Embankments, dikes, and levees  evere: seepage piping ponding  evere: seepage piping wetness  evere: excess humus	Aquifer-fed excavated ponds     Severe:   slow refill   cutbanks cave    Severe:   cutbanks cave		Irrigation	Terraces and diversions  Too sandy soil blowing ponding  Too sandy wetness	Grassed waterways  Wetness  Wetness
map unit	levees  evere: seepage piping ponding  evere: seepage piping wetness evere:	ponds 	  Frost action   subsides   ponding	  Soil blowing   ponding      Fast intake   wetness	Too sandy soil blowing ponding Too sandy wetness	    Wetness              Wetness
543:  Markey	evere: seepage piping ponding evere: seepage piping wetness evere:		subsides ponding	ponding          Fast intake   wetness	soil blowing ponding  Too sandy wetness	        Wetness
Markey	seepage piping ponding evere: seepage piping wetness evere:	slow refill   cutbanks cave      Severe:   cutbanks cave	subsides ponding	ponding          Fast intake   wetness	soil blowing ponding  Too sandy wetness	        Wetness
Markey	seepage piping ponding evere: seepage piping wetness evere:	slow refill   cutbanks cave      Severe:   cutbanks cave	subsides ponding	ponding          Fast intake   wetness	soil blowing ponding  Too sandy wetness	        Wetness
	seepage piping ponding evere: seepage piping wetness evere:	slow refill   cutbanks cave      Severe:   cutbanks cave	subsides ponding	ponding          Fast intake   wetness	soil blowing ponding  Too sandy wetness	        Wetness
Cormant	piping ponding evere: seepage piping wetness evere:	cutbanks cave	ponding	      Fast intake   wetness	ponding           Too sandy   wetness	
	ponding evere: seepage piping wetness evere:	  Severe:   cutbanks cave   		wetness	    Too sandy   wetness	
seepage   s	seepage piping wetness evere:	cutbanks cave	  Cutbanks cave   	wetness	wetness	
seepage   s	seepage piping wetness evere:	cutbanks cave		wetness	wetness	
	piping wetness evere:					droughty
	wetness	    -		aroughey	soil blowing	droughty
	evere:	Covers	 		Boll Blowing	İ
seepage   e		Corromo				İ
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	excess humus	1	Frost action	Soil blowing	Soil blowing	Wetness
		slow refill	subsides	ponding	ponding	
	ponding		ponding			
544:			 		 	l I
Cathro 90   Severe:   Se	evere:	Severe:	Frost action	Soil blowing	Soil blowing	Wetness
seepage   r	piping	slow refill	subsides	ponding	ponding	
	ponding		ponding			
Percy, very cobbly  4   Moderate:   Se	evere:	  Moderate:	  Frost action	  Wetness	  Wetness	  Wetness
	piping	slow refill		İ	İ	İ
į	wetness	į		į	į	į
	evere:	  Severe:	Frost action	  Wetness	  Erodes easily	  Erodes easil
	piping	slow refill		soil blowing	wetness	wetness
	wetness	cutbanks cave		į	soil blowing	į
	evere:	  Severe:	Frost action	Soil blowing	Soil blowing	  Wetness
-	excess humus	slow refill	subsides	ponding	ponding	
	ponding	İ	ponding	İ	İ	İ
546:		1	 	1	 	 
	evere:	Severe:	Frost action	Wetness	Wetness	Wetness
seepage   s	excess humus	slow refill	subsides	soil blowing	soil blowing	İ
	wetness	į		į	į	į
	evere:	  Severe:	Frost action	  Wetness	Wetness	Wetness
	excess humus	slow refill	subsides	soil blowing	soil blowing	
	wetness					İ
	evere:	  Severe:	Percs slowly	Percs slowly	Percs slowly	Percs slowly
	evere: hard to pack	severe:   slow refill	subsides	soil blowing	soil blowing	wetness
1 - 1	ponding	DIOM LETTIT	ponding	ponding	ponding	"6011699

Table 22.--Water Management--Continued

Table 22.--Water Management--Continued

		L:	imitations for-			Features a	ffecting	
Map symbol and component name	Percent of map unit	Pond reservoir   areas	Embankments, dikes, and levees	Aquifer-fed   excavated   ponds	Drainage	   Irrigation 	Terraces and   diversions 	Grassed   waterways 
546: Tawas	     3	    Severe:	    Severe:	    Severe:	    Frost action	    Wetness	Too sandy	    Wetness
Iawas	3     	seepage	seepage   piping   wetness	slow refill   cutbanks cave	subsides	soil blowing	wetness   soil blowing	  -  -
547:		 	 		İ			
Deerwood	90	Severe:   seepage 	Severe:   seepage   piping   ponding	Severe:   cutbanks cave 	Subsides   ponding   cutbanks cave	Soil blowing   ponding 	Too sandy soil blowing ponding	Wetness     
Markey	<b>4</b>   	  Severe:   seepage   	Severe:   seepage   piping   ponding	Severe:   slow refill   cutbanks cave	  Frost action   subsides   ponding 	  Soil blowing   ponding 	Too sandy   soil blowing   ponding 	  Wetness     
Rosewood	3	  Severe:   seepage 	Severe:   seepage   piping   wetness	  Severe:   cutbanks cave 	  Cutbanks cave     	  Wetness   droughty 	Too sandy   wetness   soil blowing	Wetness   droughty 
Syrene	   3   	  Severe:   seepage 	  Severe:   seepage   wetness	  Severe:   cutbanks cave 	  Cutbanks cave     	  Wetness   soil blowing   droughty	  Erodes easily   too sandy   wetness	  Erodes easily   wetness   droughty
550:	!							
Dora	90	Severe:   seepage 	Severe:   hard to pack   ponding	Severe:   slow refill 	Percs slowly subsides ponding	Percs slowly soil blowing ponding	Percs slowly soil blowing ponding	Percs slowly   wetness 
Boash	<b>4</b>   	  Moderate:   seepage 	Severe:   piping   wetness	Severe:   slow refill	  Frost action   percs slowly 	  Percs slowly   wetness	Wetness	Percs slowly   wetness
Seelyeville	   3 	  Severe:   seepage 	  Severe:   excess humus   ponding	  Severe:   slow refill 	  Frost action   subsides   ponding	  Soil blowing   ponding 	  Soil blowing   ponding 	  Wetness   
Woodslake	   3   	  Slight   	  Severe:   hard to pack   ponding	  Severe:   slow refill 	  Percs slowly   ponding   	  Slow intake   ponding   droughty	  Percs slowly   ponding 	  Percs slowly   wetness   droughty

Table 22.--Water Management--Continued

		L	imitations for-	-	Features affecting				
Map symbol and component name	Percent of map unit	Pond reservoir   areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	   Drainage 	   Irrigation 	Terraces and   diversions	Grassed   waterways	
561:					 				
Bullwinkle	90	  Severe:   seepage	Severe:   excess humus   wetness	Severe:   slow refill	  Frost action   subsides	Wetness   soil blowing	  Wetness   soil blowing 	  Wetness   	
Lupton	   <b>4</b> 	  Severe:   seepage	  Severe:   excess humus   wetness	  Severe:   slow refill	  Frost action   subsides	  Wetness   soil blowing	  Wetness   soil blowing	  Wetness 	
Northwood, wooded	   <b>4</b> 	  Severe:   seepage	  Severe:   piping   ponding	  Severe:   cutbanks cave 	Frost action   subsides   ponding	Rooting depth   soil blowing   ponding	  Erodes easily   soil blowing   ponding	  Erodes easily   rooting dept   wetness	
Chilgren	   2 	  Moderate:   seepage 	  Severe:   piping   wetness	  Moderate:   slow refill	  Frost action   	Rooting depth   wetness   soil blowing	  Wetness   soil blowing	  Rooting depth   wetness	
563:	 	 	 		 		 		
Northwood	90	Severe:   seepage	Severe:   piping   ponding	Severe:   cutbanks cave	Frost action   subsides   ponding	Rooting depth soil blowing ponding	Erodes easily soil blowing ponding	Erodes easily rooting dept	
Grygla	   4 	  Severe:   seepage	  Severe:   piping   wetness	  Severe:   slow refill   cutbanks cave	  Frost action   	  Wetness   soil blowing	  Erodes easily   wetness   soil blowing	  Erodes easily   wetness	
Berner	   3 	  Severe:   seepage	  Severe:   excess humus   ponding	  Severe:   slow refill   cutbanks cave	  Frost action   subsides   ponding	Rooting depth   soil blowing   ponding	  Soil blowing   ponding	  Rooting depth   wetness	
Strandquist	   3 	  Moderate:   seepage 	  Severe:   piping   wetness	  Severe:   cutbanks cave 	  Frost action   	  Wetness   	  Erodes easily   wetness 	  Erodes easily   wetness 	
565:		 	 		 		 		
Eckvoll	   85 	Severe:   seepage 	Moderate:   piping   wetness	Severe:   slow refill   cutbanks cave	Frost action   	Fast intake   wetness   soil blowing	Erodes easily   wetness   soil blowing	Erodes easily	
Chilgren	   5 	  Moderate:   seepage 	  Severe:   piping   wetness	  Moderate:   slow refill 	  Frost action   	Rooting depth   wetness   soil blowing	  Wetness   soil blowing 	  Rooting depth   wetness 	
Grygla	   5 	  Severe:   seepage	  Severe:   piping   wetness	  Severe:   slow refill   cutbanks cave	  Frost action   	  Wetness   soil blowing 	  Erodes easily   wetness   soil blowing	  Erodes easily   wetness 	

Table 22.--Water Management--Continued

		L:	imitations for-			Features a	ffecting	
Map symbol and component name	Percent of map unit	Pond reservoir   areas	Embankments, dikes, and levees	Aquifer-fed   excavated   ponds	   Drainage 	   Irrigation 	Terraces and   diversions 	Grassed   waterways
565: Hiwood	     5 	    Severe:   seepage 	  Severe:   seepage   piping	  Severe:   cutbanks cave 	    Slope   cutbanks cave   	  Slope   wetness   droughty	    Too sandy   wetness 	    Droughty   
568: Zippel	   85 	  Severe:   seepage 	  Severe:   piping   wetness	  Severe:   cutbanks cave		    Wetness   	  Erodes easily   wetness   soil blowing	  Erodes easily   wetness
Augsburg, depressional-	   5 	  Severe:   seepage 	  Severe:   hard to pack   ponding	  Severe:   slow refill   cutbanks cave	percs slowly	  Percs slowly   ponding 	  Percs slowly   ponding 	  Percs slowly   wetness 
Sago	   5   	  Moderate:   seepage   	Severe:   seepage   piping   ponding	  Severe:   cutbanks cave 	  Frost action   subsides   ponding	  Soil blowing   ponding 	Too sandy soil blowing ponding	  Wetness     
Skime	   5   	  Severe:   seepage 	  Severe:   seepage   piping	  Severe:   cutbanks cave 	  Cutbanks cave     	  Wetness   droughty   	Too sandy wetness soil blowing	  Droughty   
569: Wabanica	   85 	  Moderate:   seepage	  Severe:   piping   wetness	  Moderate:   slow refill	    Frost action 	  Wetness   	    Wetness   	  Wetness 
Warroad	   6 	  Severe:   seepage   	  Severe:   wetness   	  Severe:   slow refill   cutbanks cave	  Frost action     	  Wetness   soil blowing   	  Erodes easily   wetness   soil blowing	  Erodes easily   wetness   
Sax	   <b>4</b> 	  Moderate:   seepage 	  Severe:   piping   ponding	  Severe:   slow refill	  Frost action   subsides   ponding	  Soil blowing   ponding 	  Erodes easily   soil blowing   ponding	  Erodes easily   wetness 
Grano	   3 	  Slight   	  Severe:   hard to pack   wetness	  Severe:   slow refill 	  Frost action   percs slowly 	  Percs slowly   wetness	Percs slowly   wetness	Percs slowly   wetness
Enstrom	   2 	  Severe:   seepage	  Severe:   piping	  Severe:   slow refill   cutbanks cave	  Favorable   	  Wetness   droughty 	  Erodes easily   wetness	  Erodes easily   droughty

Table	22Water	Management Continu	iec

J		L:	imitations for-	-		Features a	ffecting	
Map symbol and component name	Percent of	Pond reservoir	Embankments, dikes, and	Aquifer-fed excavated	Drainage	   Irrigation	Terraces and diversions	Grassed   waterways
	map unit	İ	levees	ponds		İ		
570:		 	 		 	 	 	
Faunce	85	Severe:   seepage	Severe:   seepage	Severe:	Deep to water	Fast intake   droughty	Too sandy	Rooting depth droughty
Clearriver	7	  Severe:   seepage 	  Severe:   seepage 	Severe:   cutbanks cave	1	  Fast intake   wetness   droughty	  Too sandy   wetness   soil blowing	  Droughty   
Zimmerman	4	  Severe:   seepage 	  Severe:   seepage   piping	Severe:   no water 	  Deep to water   	  Fast intake   slope   droughty	  Too sandy   soil blowing 	  Droughty   
Meehan	3	  Severe:   seepage 	   Severe:   seepage   piping   wetness	  Severe:   cutbanks cave 	  Too acid   cutbanks cave   	  Fast intake   wetness   droughty 	Too sandy wetness soil blowing	  Wetness   droughty 
Pits, gravel	1	   	   		   	   	   	
581:								
Percy	90	Moderate:   seepage 	Severe:   piping   wetness	Moderate:   slow refill 	Frost action   	Wetness   soil blowing 	Wetness   soil blowing 	Wetness   
Haug	5	  Moderate:   seepage 	Severe:   piping   ponding	Moderate:   slow refill 	  Frost action   ponding 	  Soil blowing   ponding 	  Soil blowing   ponding 	  Wetness   
Boash	3	  Moderate:   seepage 	Severe:   piping   wetness	Severe:   slow refill	  Frost action   percs slowly 	  Percs slowly   wetness	  Wetness   	  Percs slowly   wetness
Skagen	2	  Severe:   seepage 	  Severe:   piping 	Moderate:   slow refill   deep to water	  Frost action     	  Wetness     	  Wetness     	  Favorable   
582:					İ			
Roliss	85	Moderate:   seepage 	Severe:   piping   wetness	Severe:   slow refill 	Frost action   	Wetness   	Wetness   	Wetness   
Roliss, depressional	7	  Moderate:   seepage 	  Severe:   piping   ponding	  Severe:   slow refill	  Frost action   ponding 	  Ponding   	  Ponding   	  Wetness   

Table 22.--Water Management--Continued

Map symbol and component name	Percent of map unit	Limitations for			Features affecting			
		Pond reservoir   areas	Embankments, dikes, and levees	Aquifer-fed   excavated   ponds	   Drainage 	   Irrigation 	Terraces and   diversions	Grassed   waterways
582:		 	 		 	 		 
Boash	5	Moderate:   seepage	Severe:   piping   wetness	Severe:   slow refill 	Frost action   percs slowly	Percs slowly   wetness	Wetness 	Percs slowly   wetness
Haug	3	  Moderate:   seepage 	Severe:   piping   ponding	  Moderate:   slow refill 	  Frost action   ponding 	  Soil blowing   ponding 	  Soil blowing   ponding 	  Wetness   
583:		 			 	 		 
Nereson	85	Severe:   seepage	Severe:   seepage   piping	Moderate:   slow refill   deep to water	Frost action   	Wetness   soil blowing 	Wetness   soil blowing 	Favorable   
Percy	10	  Moderate:   seepage 	Severe:   piping   wetness	  Moderate:   slow refill 	  Frost action   	  Wetness   	  Wetness   	  Wetness   
Pelan	3	  Severe:   seepage 	  Severe:   piping 	Moderate:   slow refill   cutbanks cave   deep to water	  Favorable   	  Wetness   droughty   	  Wetness   soil blowing 	  Rooting depth   droughty   
Foxhome	2	  Severe:   seepage	  Severe:   piping	  Severe:   cutbanks cave	  Frost action   	  Wetness   soil blowing	  Wetness   soil blowing	  Favorable 
627:								ì
Tawas	90	Severe:   seepage 	Severe: seepage piping wetness	Severe:   slow refill   cutbanks cave	Frost action   subsides   cutbanks cave	Wetness   soil blowing   	Too sandy wetness soil blowing	Wetness     
Leafriver	4	  Severe:   seepage 	Severe:   seepage   piping   ponding	  Severe:   cutbanks cave 	  Frost action   subsides   ponding	  Soil blowing   ponding 	  Too sandy   soil blowing   ponding	  Wetness     
Lupton	4	  Severe:   seepage 	Severe:   excess humus   wetness	  Severe:   slow refill 	  Frost action   subsides 	  Wetness   soil blowing 	  Wetness   soil blowing 	  Wetness   
Cormant	2	  Severe:   seepage 	Severe:   seepage   piping   wetness	  Severe:   cutbanks cave   	  Cutbanks cave   	  Fast intake   wetness   droughty	  Too sandy   wetness   soil blowing	  Wetness   droughty 

Table 22.--Water Management--Continued

Map symbol and component name		Limitations for			Features affecting				
	Percent of map unit	Pond reservoir   areas	Embankments,   dikes, and   levees	Aquifer-fed excavated ponds	   Drainage 	   Irrigation 	Terraces and diversions	Grassed   waterways	
630: Wildwood	90	    Slight   	  Severe:   hard to pack   ponding	  Severe:   slow refill	    Frost action   percs slowly   ponding	  Percs slowly   soil blowing   ponding	  Percs slowly   soil blowing   ponding	  Percs slowly   wetness	
Boash	4	  Moderate:   seepage	  Severe:   piping   wetness	  Severe:   slow refill 	  Frost action   percs slowly	  Percs slowly   wetness	  Wetness   	  Percs slowly   wetness	
Dora	4	  Severe:   seepage	  Severe:   hard to pack   ponding	  Severe:   slow refill 	  Percs slowly   subsides   ponding	  Percs slowly   soil blowing   ponding	  Percs slowly   soil blowing   ponding	  Percs slowly   wetness	
Espelie	2	  Severe:   seepage 	  Severe:   wetness	  Severe:   slow refill   cutbanks cave	  Frost action   percs slowly 	  Wetness   soil blowing   droughty	  Percs slowly   wetness   soil blowing	  Percs slowly   wetness   droughty	
643:			 		1	] 	] 		
Huot	85	Severe:   seepage	Severe:   hard to pack	Severe:   slow refill   cutbanks cave	Frost action   percs slowly	Wetness   droughty 	Percs slowly wetness soil blowing	Percs slowly   droughty 	
Thiefriver	12	  Severe:   seepage	  Severe:   wetness	  Severe:   slow refill   cutbanks cave	  Frost action   percs slowly	  Wetness   soil blowing   droughty	Percs slowly   wetness   soil blowing	  Percs slowly   wetness   droughty	
Redby	3	  Severe:   seepage 	Severe:   seepage   piping   wetness	  Severe:   cutbanks cave   	  Cutbanks cave   	  Fast intake   wetness   droughty	Too sandy wetness soil blowing	  Droughty   	
644:		 	 		 	 	 	l I	
Boash	85	Moderate:   seepage 	Severe:   piping   wetness	Severe:   slow refill	  Frost action   percs slowly 	Percs slowly   wetness	Wetness 	Percs slowly   wetness	
Percy	7	  Moderate:   seepage	Severe:   piping   wetness	  Moderate:   slow refill	  Frost action   	  Wetness   	  Wetness   	  Wetness   	
Woodslake	5	  Slight   	  Severe:   hard to pack   ponding	  Severe:   slow refill	  Percs slowly   ponding	  Slow intake   ponding   droughty	  Percs slowly   ponding	  Percs slowly   wetness   droughty	
Strandquist	3	  Moderate:   seepage 	  Severe:   piping   wetness	  Severe:   cutbanks cave	  Frost action   	  Wetness   	  Erodes easily   wetness 	  Erodes easily   wetness	

Table 22.--Water Management--Continued

		L:	imitations for-	-	Features affecting				
Map symbol and component name	of	Pond reservoir	dikes, and	Aquifer-fed   excavated	   Drainage	   Irrigation	Terraces and diversions	Grassed waterways	
	map unit	1	levees	ponds	<u> </u>		1		
645:		l I	 		 		l I		
Espelie	85	Severe:   seepage	Severe:   wetness	Severe:   slow refill   cutbanks cave	  Frost action   percs slowly 	Wetness   soil blowing   droughty	Percs slowly wetness soil blowing	Percs slowly wetness droughty	
Grano	5	  Slight   	  Severe:   hard to pack   wetness	  Severe:   slow refill	  Frost action   percs slowly	  Percs slowly   wetness	  Percs slowly   wetness	  Percs slowly   wetness	
Hilaire	5	  Severe:   seepage	  Severe:   hard to pack 	  Severe:   slow refill   cutbanks cave	  Frost action   percs slowly	  Wetness   droughty 	  Percs slowly   wetness   soil blowing	  Percs slowly   droughty 	
Wildwood	5	  Slight   	  Severe:   hard to pack   ponding	  Severe:   slow refill	  Frost action   percs slowly   ponding	  Percs slowly   soil blowing   ponding	  Percs slowly   soil blowing   ponding	  Percs slowly   wetness	
651:		l I	 		 		 	I I	
Thiefriver	85	Severe:   seepage	Severe:   wetness	Severe:   slow refill   cutbanks cave	  Frost action   percs slowly	Wetness   soil blowing   droughty	Percs slowly wetness soil blowing	Percs slowly wetness droughty	
Grano	5	  Slight   	  Severe:   hard to pack   wetness	  Severe:   slow refill	  Frost action   percs slowly	  Percs slowly   wetness	  Percs slowly   wetness	  Percs slowly   wetness	
Huot	5	  Severe:   seepage	  Severe:   hard to pack 	  Severe:   slow refill   cutbanks cave	  Frost action   percs slowly	  Wetness   droughty 	  Percs slowly   wetness   soil blowing	  Percs slowly   droughty 	
Wildwood	5	  Slight   	  Severe:   hard to pack   ponding	  Severe:   slow refill 	  Frost action   percs slowly   ponding	Percs slowly soil blowing ponding	  Percs slowly   soil blowing   ponding	  Percs slowly   wetness 	
708:		 	 		 		 		
Rushlake	85	Severe:   seepage	Severe:   seepage	Severe:   cutbanks cave	Cutbanks cave	Wetness   droughty	Too sandy wetness soil blowing	Droughty 	
Corliss	6	  Severe:   seepage	  Severe:   seepage	  Severe:   no water 	  Deep to water   	  Fast intake   slope   droughty	  Too sandy   soil blowing 	  Droughty   	
Redby	5	  Severe:   seepage 	  Severe:   seepage   piping   wetness	  Severe:   cutbanks cave 	  Cutbanks cave   	  Fast intake   wetness   droughty 	  Too sandy   wetness   soil blowing	  Droughty     	

Table 22Water	ManagementContinued
Limitations for	

			imitations for-	-		Features a	ffecting	
Map symbol and component name	Percent of map unit	Pond reservoir   areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	   Drainage 	   Irrigation 	Terraces and   diversions	Grassed   waterways
708:	 	 	 		 	 	 	
Hangaard	3	Severe:   seepage	Severe:   seepage   wetness	Severe:   cutbanks cave	Cutbanks cave	Wetness   droughty 	Too sandy wetness soil blowing	Wetness   droughty 
Pits, gravel	   1 	   	   		   	   	 	
712:		İ	İ	İ	İ	j	İ	İ
Rosewood	85   	Severe:   seepage   	Severe:   seepage   piping   wetness	Severe:   cutbanks cave   	Cutbanks cave       	Wetness   droughty   	Too sandy   wetness   soil blowing 	Wetness   droughty   
Deerwood	6   	  Severe:   seepage 	Severe:   seepage   piping   ponding	Severe:   cutbanks cave	  Subsides   ponding   cutbanks cave 	Soil blowing   ponding 	Too sandy soil blowing ponding	  Wetness     
Hangaard	   5 	  Severe:   seepage 	  Severe:   seepage   wetness	  Severe:   cutbanks cave 	  Cutbanks cave   	  Wetness   droughty 	Too sandy wetness soil blowing	  Wetness   droughty 
Ulen	   <b>4</b> 	  Severe:   seepage 	Severe:   seepage   piping	  Severe:   cutbanks cave	  Cutbanks cave   	  Wetness   droughty 	Too sandy wetness soil blowing	  Droughty   
721B:	 	 	 		 	 		
Corliss	   85 	Severe:   seepage	Severe:   seepage	Severe:   no water	  Deep to water   	Fast intake   slope   droughty	Too sandy soil blowing	Droughty 
Rushlake	   10 	  Severe:   seepage	  Severe:   seepage	  Severe:   cutbanks cave	  Cutbanks cave   	  Wetness   droughty 	Too sandy wetness soil blowing	  Droughty   
Hangaard	   <b>4</b> 	  Severe:   seepage	  Severe:   seepage   wetness	  Severe:   cutbanks cave	  Cutbanks cave   	  Wetness   droughty 	Too sandy wetness soil blowing	  Wetness   droughty 
Pits, gravel	   1 	   	   	   	   	   	   	   
733:								
Berner	90   	Severe:   seepage 	Severe:   excess humus   ponding	Severe:   slow refill   cutbanks cave	Frost action   subsides   ponding	Rooting depth   soil blowing   ponding	Soil blowing   ponding 	Rooting dept

Table 22.--Water Management--Continued

		L:	imitations for-	-		Features a	ffecting	
Map symbol and component name	Percent of map unit	Pond reservoir   areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	   Drainage 	   Irrigation 	Terraces and diversions	Grassed   waterways
733: Grygla	     5 	    Severe:   seepage 	  Severe:   piping   wetness	  Severe:   slow refill   cutbanks cave	    Frost action   	    Wetness   soil blowing   	  Erodes easily   wetness   soil blowing	    Erodes easily   wetness   
Seelyeville	   5 	  Severe:   seepage	  Severe:   excess humus   ponding	  Severe:   slow refill	  Frost action   subsides   ponding	  Soil blowing   ponding	  Soil blowing   ponding	  Wetness   
737: Mahkonce	     85 	    Slight   	    Moderate:   wetness	  Severe:   slow refill	    Frost action   percs slowly 	    Wetness   soil blowing	    Wetness   soil blowing	    Percs slowly   
Auganaush	10	  Slight 	  Severe:   wetness	  Severe:   slow refill	  Frost action   percs slowly	Percs slowly wetness	Percs slowly wetness	Percs slowly wetness
Eckvoll	   5 	  Severe:   seepage	  Moderate:   piping   wetness	  Severe:   slow refill   cutbanks cave	  Frost action   	  Fast intake   wetness   soil blowing	  Erodes easily   wetness   soil blowing	  Erodes easily   
755: Woodslake	     85 	    Slight   	  Severe:   hard to pack   ponding	  Severe:   slow refill	  Percs slowly   ponding	  Slow intake   ponding   droughty	  Percs slowly   ponding 	  Percs slowly   wetness   droughty
Boash	   8 	  Moderate:   seepage	  Severe:   piping   wetness	  Severe:   slow refill 	  Frost action   percs slowly	  Percs slowly   wetness	  Wetness   	  Percs slowly   wetness
Wildwood	   5 	  Slight   	  Severe:   hard to pack   ponding	  Severe:   slow refill	  Frost action   percs slowly   ponding	Percs slowly soil blowing ponding	Percs slowly soil blowing ponding	  Percs slowly   wetness
Dora	   2 	  Severe:   seepage 	  Severe:   hard to pack   ponding	  Severe:   slow refill 	  Percs slowly   subsides   ponding	  Percs slowly   soil blowing   ponding	Percs slowly   soil blowing   ponding	  Percs slowly   wetness 
767: Auganaush	     90	    Slight 	    Severe:   wetness	  Severe:   slow refill	    Frost action   percs slowly	    Percs slowly   wetness	    Percs slowly   wetness	    Percs slowly   wetness
Mustinka	   5 	    Slight   	  Severe:   wetness	Severe:	percs slowly    Frost action   percs slowly	Percs slowly   wetness	    Erodes easily   wetness	wetness    Erodes easily   percs slowly   wetness

		L:	imitations for-	-		Features a	ffecting	
Map symbol and	Percent	Pond reservoir	Embankments,	Aquifer-fed	<u> </u>		Terraces and	Grassed
component name	of	areas	dikes, and	excavated	Drainage	Irrigation	diversions	waterways
	map unit	<u>İ</u>	levees	ponds	İ	İ	<u>i</u>	İ
767:				1.5	 			
Wildwood	3	Slight	Severe:	Severe:	Frost action	Percs slowly	Percs slowly	Percs slowly
		 	hard to pack ponding	slow refill	percs slowly ponding	soil blowing ponding	soil blowing   ponding	wetness
		}	ponding		ponding	ponding	policing	 
Mahkonce	2	Slight	Moderate:	Severe:	Frost action	Wetness	Wetness	Percs slowly
	_		wetness	slow refill	percs slowly	soil blowing	soil blowing	
		j		j	İ	İ		İ
794:								[
Clearriver	85	Severe:	Severe:	Severe:	Cutbanks cave		Too sandy	Droughty
		seepage	seepage	cutbanks cave		wetness	wetness	
						droughty	soil blowing	
Hiwood	7	  Severe:					   man   man des	   D
H1WOOd	,	seepage	Severe:   seepage	Severe:	Slope   cutbanks cave	Slope   wetness	Too sandy wetness	Droughty
		seepage	seepage   piping	Cutbanks cave	Cutbanks cave	droughty	wethess	 
		i i	piping		! [	dioughty		] [
Meehan	5	Severe:	Severe:	Severe:	Too acid	Fast intake	Too sandy	Wetness
		seepage	seepage	cutbanks cave	cutbanks cave	wetness	wetness	droughty
		Ì	piping	Ì	İ	droughty	soil blowing	İ
			wetness					
		ļ		ļ	!			!
Faunce	3	Severe:	Severe:	Severe:	Deep to water		Too sandy	Rooting depth
		seepage	seepage	no water	l I	droughty	soil blowing	droughty
1002:		}	 		 	 		 
Fluvaquents, frequently					 			 
flooded	90	Severe:	Severe:	Severe:	Flooding	Rooting depth	Too sandy	Rooting depth
		seepage	seepage	cutbanks cave	frost action	ponding	soil blowing	wetness
		Ì	piping	Ì	ponding	droughty	ponding	droughty
		ĺ	ponding	İ	ĺ	İ	İ	ĺ
		ļ		ļ				
Seelyeville	6	Severe:	Severe:	Severe:	Frost action	Ponding	Ponding	Wetness
		seepage	excess humus	slow refill	ponding			
			ponding			 		
Hapludalfs	2	  Severe:	  Severe:	  Severe:	  Frost action	  Slope	  Erodes easily	  Erodes easily
napiadalib	_	seepage	piping	slow refill	slope	wetness	slope	slope
		slope				soil blowing	wetness	
		i	İ	į	İ	j	İ	İ
Water	2	i		i	i			
		ļ		ļ				
1030:		1		ļ				
Pits, gravel	75							

Table 22.--Water Management--Continued

Table 22.--Water Management--Continued

		L:	imitations for-	-		Features a	ffecting	
Map symbol and component name	Percent of map unit	Pond reservoir   areas	Embankments, dikes, and levees	Aquifer-fed   excavated   ponds	   Drainage 	   Irrigation 	Terraces and   diversions	Grassed   waterways
1030: Udipsamments	20	Severe:	  Severe:	    Severe:   no water	    Deep to water	    Fast intake   slope	    Slope   too sandy	    Slope   droughty
		seepage   slope 	seepage   piping		 	droughty	soil blowing	i i
Corliss	2	Severe:   seepage 	Severe:   seepage 	Severe:   no water 	Deep to water     	Fast intake   slope   droughty	Too sandy   soil blowing   	Droughty     
Karlstad	2	Severe:   seepage	Severe:   seepage   piping	Severe:   cutbanks cave 		Fast intake   wetness   droughty	Large stones   too sandy   wetness	Large stones   droughty 
Hangaard	1	Severe:   seepage	Severe:   seepage   wetness	Severe:   cutbanks cave 	Cutbanks cave   	Wetness   droughty 	Too sandy   wetness   soil blowing	Wetness   droughty 
1031:					İ			
Seelyeville, ponded	90	Severe:   seepage 	Severe:   excess humus   ponding	Severe:   slow refill 	Frost action   ponding 	Ponding   	Ponding   	Wetness   
Cathro	4	  Severe:   seepage 	Severe:   piping   ponding	Severe:   slow refill	  Frost action   subsides   ponding	Soil blowing   ponding 	Soil blowing   ponding 	  Wetness   
Dora	3	  Severe:   seepage 	  Severe:   hard to pack   ponding	Severe:   slow refill 	  Percs slowly   subsides   ponding	Percs slowly   soil blowing   ponding	Percs slowly   soil blowing   ponding	Percs slowly   wetness
Markey	3	Severe:   seepage 	Severe:   seepage   piping   ponding	Severe:   slow refill   cutbanks cave	Frost action   subsides   ponding	Soil blowing   ponding 	Too sandy soil blowing ponding	  Wetness     
1067:			İ	İ	İ	i	İ	İ
Fluvaquents, frequently								
flooded	60	Severe:   seepage 	Severe:   seepage   piping   ponding	Severe:   cutbanks cave 	Flooding   frost action   ponding	Rooting depth   ponding   droughty	Too sandy   soil blowing   ponding	Rooting depth   wetness   droughty

		L	imitations for-	-		Features a	ffecting	
Map symbol and component name	of	Pond reservoir areas	Embankments, dikes, and	Aquifer-fed   excavated	   Drainage	   Irrigation	Terraces and diversions	Grassed waterways
	map unit		levees	ponds				
1067:					 	 		
Hapludalfs	30	Severe:	Severe:	Severe:	Frost action	Slope	Erodes easily	Erodes easil
		seepage	piping	slow refill	slope	wetness	slope	slope
		slope				soil blowing	wetness	
Seelyeville	5	  Severe:	  Severe:	Severe:	  Frost action	  Ponding	  Ponding	Wetness
		seepage	excess humus	slow refill	ponding		Ì	
			ponding					
Water	5					 		
133B:					 	 		
Skime	85	Severe:	Severe:	Severe:	Cutbanks cave	Wetness	Too sandy	Droughty
		seepage	seepage	cutbanks cave		droughty	wetness	
		 	piping		 	İ	soil blowing	
Hiwood	10	Severe:	Severe:	Severe:	  Slope	  Slope	Too sandy	Droughty
		seepage	seepage	cutbanks cave	cutbanks cave		wetness	
		 	piping		 	droughty		
Zippel	5	Severe:	Severe:	Severe:	Frost action	Wetness	Erodes easily	Erodes easil
		seepage	piping	cutbanks cave	cutbanks cave		wetness	wetness
		 	wetness		 	İ	soil blowing	
1134:						 		
Borup	55	Severe:	Severe:	Severe:	Frost action	Wetness	Wetness	Wetness
		seepage	piping	cutbanks cave	cutbanks cave		!	
		 	wetness		 	 	1	
Clamdon	2 5	Corromo	Corromo	Corromo	  Emost ostion	Wetness	  Emades essiles	 

Table 22.--Water Management--Continued

		L:	imitations for-			Features a	ffecting	
Map symbol and component name	of	Pond reservoir areas	dikes, and	Aquifer-fed   excavated	   Drainage	   Irrigation	Terraces and   diversions	Grassed   waterways
	map unit		levees	ponds				
1067:		 	 		 	l I		
Hapludalfs	30	  Severe:	  Severe:	  Severe:	  Frost action	  Slope	  Erodes easily	  Frodes easily
napiudalis	30	seepage	piping	slow refill	slope	wetness	slope	slope
		slope			blope	soil blowing	wetness	blope
Seelyeville	5	Severe:	Severe:	Severe:	Frost action	Ponding	Ponding	Wetness
		seepage	excess humus	slow refill	ponding			
			ponding					
	_							
Water	5							
1133B:			 		 	 		
Skime	85	  Severe:	  Severe:	Severe:	  Cutbanks cave	  Wetness	Too sandy	Droughty
		seepage	seepage	cutbanks cave		droughty	wetness	
i		İ	piping			j	soil blowing	İ
i		j		İ	İ	į		İ
Hiwood	10	Severe:	Severe:	Severe:	Slope	Slope	Too sandy	Droughty
		seepage	seepage	cutbanks cave	cutbanks cave	wetness	wetness	
		!	piping			droughty		!
	_							
Zippel	5	Severe:	Severe:	Severe:	Frost action	Wetness		Erodes easily
		seepage	piping   wetness	cutbanks cave	cutbanks cave		wetness   soil blowing	wetness
		 	wetness		 	l I	soil blowing	1
1134:						 		
Borup	55	Severe:	Severe:	Severe:	Frost action	Wetness	Wetness	Wetness
- i		seepage	piping	cutbanks cave	cutbanks cave	İ	İ	İ
İ		İ	wetness		İ	ĺ		İ
Glyndon	35	Severe:	Severe:	Severe:	Frost action	Wetness	Erodes easily	Erodes easily
		seepage	piping	cutbanks cave	cutbanks cave	soil blowing	wetness	
		1	 	1	 	l I	soil blowing	
Augsburg, depressional-	5	  Severe:	  Severe:	Severe:	  Frost action	Percs slowly	  Percs slowly	Percs slowly
nagbbarg, acpressionar	3	seepage	hard to pack	slow refill	percs slowly	ponding	ponding	wetness
		Scopage	ponding	cutbanks cave				
i				İ				İ
Skime	5	Severe:	Severe:	Severe:	Cutbanks cave	Wetness	Too sandy	Droughty
		seepage	seepage	cutbanks cave		droughty	wetness	
			piping				soil blowing	
1144:			 		 			
Strathcona,	4.5	  Corromo	   Corromo	Corroma	  Programme===================================	  Coil blassian	  Coil blassies	  Wetness
depressional	45	Severe:   seepage	Severe:   piping	Severe:   slow refill	Frost action ponding	Soil blowing   ponding	Soil blowing   ponding	Wetness
		seepaye	piping   ponding	cutbanks cave	ponding	bongring	ponding	1
		1	Ponding	Cathanna cave		1	!	1

Table 22.--Water Management--Continued

		L:	imitations for-	-		Features a	ffecting	
Map symbol and component name	Percent of map unit	Pond reservoir   areas	Embankments, dikes, and levees	Aquifer-fed   excavated   ponds	   Drainage 	   Irrigation	Terraces and   diversions	Grassed   waterways
		İ	İ			İ	İ	İ
1144: Kratka, depressional	45	  Severe:   seepage	  Severe:   piping   ponding	  Severe:   slow refill   cutbanks cave	  Ponding   	  Soil blowing   ponding	  Soil blowing   ponding 	  Rooting depth   wetness
Kratka	5	  Severe:   seepage	  Severe:   piping   wetness	  Severe:   slow refill   cutbanks cave	  Favorable   	Wetness   soil blowing   droughty	  Erodes easily   wetness   soil blowing	  Erodes easily   wetness   droughty
Northwood	5	  Severe:   seepage 	  Severe:   piping   ponding	  Severe:   cutbanks cave 	  Frost action   subsides   ponding	Rooting depth soil blowing ponding	  Erodes easily   soil blowing   ponding	  Erodes easily   rooting depth   wetness
1154:			 		 			
Sax	90	Moderate:   seepage	Severe:   piping   ponding	Severe:   slow refill	Frost action   subsides   ponding	Soil blowing ponding	Erodes easily   soil blowing   ponding	Erodes easily   wetness
Wabanica	5	  Moderate:   seepage 	Severe:   piping   wetness	  Moderate:   slow refill	  Frost action   	  Wetness 	  Wetness   	  Wetness   
Cathro	3	  Severe:   seepage 	Severe:   piping   ponding	  Severe:   slow refill	  Frost action   subsides   ponding	Soil blowing   ponding	Soil blowing   ponding	  Wetness   
Woodslake	2	  Slight   	  Severe:   hard to pack   ponding	  Severe:   slow refill 	  Percs slowly   ponding 	Slow intake   ponding   droughty	  Percs slowly   ponding 	  Percs slowly   wetness   droughty
1158:			 		 			
Skagen	85	Severe:   seepage	Severe:   piping 	Moderate:   slow refill   deep to water	Frost action   	Wetness	Wetness   	Favorable   
Percy	10	  Moderate:   seepage 	Severe:   piping   wetness	Moderate:   slow refill	  Frost action   	Wetness	  Wetness   	  Wetness   
Foxhome	5	  Severe:   seepage	  Severe:   piping 	  Severe:   cutbanks cave	  Frost action   	  Wetness   soil blowing	  Wetness   soil blowing	  Favorable   
1170: Skagen, very cobbly	85	  Severe:   seepage 	  Severe:   piping 	  Moderate:   slow refill   deep to water	    Frost action     	  Wetness 	    Wetness     	  Favorable   

Table 22.--Water Management--Continued

		L:	imitations for-	· <del>-</del>	Features affecting				
Map symbol and component name	Percent of map unit	Pond reservoir   areas	Embankments,   dikes, and   levees	Aquifer-fed   excavated   ponds	   Drainage 	   Irrigation 	Terraces and   diversions	Grassed   waterways	
1170: Percy, very cobbly	     10 	    Moderate:   seepage 	  Severe:   piping   wetness	  Moderate:   slow refill	    Frost action   	    Wetness 	    Wetness   	    Wetness 	
Foxhome	   5 	  Severe:   seepage	  Severe:   piping	  Severe:   cutbanks cave	  Frost action 	  Wetness   soil blowing	  Wetness   soil blowing	  Favorable 	
1179B: Moranville	     85 	    Severe:   seepage	    Severe:   thin layer 	  Severe:   slow refill   cutbanks cave	    Frost action   	    Wetness   droughty 	  Erodes easily   wetness   soil blowing	    Erodes easily   droughty 	
Baudette	   5 	  Moderate:   seepage   slope	  Severe:   piping 	Severe:   cutbanks cave	  Frost action   slope   cutbanks cave	  Slope   wetness   soil blowing	  Erodes easily   wetness   soil blowing	  Erodes easily   	
Hiwood	   5 	  Severe:   seepage 	  Severe:   seepage   piping	Severe:   cutbanks cave	  Slope   cutbanks cave 	  Slope   wetness   droughty	  Too sandy   wetness 	  Droughty   	
Spooner	   5 	  Moderate:   seepage 	  Severe:   piping   wetness	Severe:   cutbanks cave	  Frost action   	  Erodes easily   wetness   soil blowing	  Erodes easily   wetness   soil blowing	  Erodes easily   wetness 	
1181: Rosewood	   50 	  Severe:   seepage 	  Severe:   seepage   piping   wetness	  Severe:   cutbanks cave 	  Cutbanks cave   	  Wetness   droughty 	  Too sandy   wetness   soil blowing	  Wetness   droughty 	
Ulen	   40 	  Severe:   seepage 	Severe:   seepage   piping	Severe:   cutbanks cave	  Cutbanks cave   	  Wetness   droughty 	Too sandy wetness soil blowing	  Droughty   	
Redby	   5   	  Severe:   seepage   	  Severe:   seepage   piping   wetness	  Severe:   cutbanks cave   	  Cutbanks cave     	  Fast intake   wetness   droughty 	  Too sandy   wetness   soil blowing 	  Droughty     	
Deerwood	   3   	  Severe:   seepage 	  Severe:   seepage   piping   ponding	  Severe:   cutbanks cave 	  Subsides   ponding   cutbanks cave 	  Soil blowing   ponding 	  Too sandy   soil blowing   ponding	  Wetness   	

Table 22.--Water Management--Continued

		L	imitations for-	-	Features affecting				
Map symbol and	Percent	Pond reservoir	Embankments,	Aquifer-fed			Terraces and	Grassed	
component name	of	areas	dikes, and	excavated	Drainage	Irrigation	diversions	waterways	
	map unit	<u> </u>	levees	ponds	<u> </u>	İ	<u>i</u>	<u> </u>	
1181:									
Svrene	2	  Severe:	  Severe:	  Severe:	  Cutbanks cave	  Wetness	  Erodes easily	  Erodes easily	
Sylene	2	seepage	seepage	cutbanks cave	Cutbanks cave	soil blowing	too sandy	wetness	
		seepage	seepage   wetness	Cuchanks cave	 	droughty	wetness	droughty	
i									
1182:									
Warroad	85	Severe:	Severe:	Severe:	Frost action	Wetness	Erodes easily	-	
		seepage	wetness	slow refill		soil blowing	wetness	wetness	
		 	 	cutbanks cave	İ	l I	soil blowing		
Wabanica	7	  Moderate:	  Severe:	Moderate:	  Frost action	Wetness	Wetness	Wetness	
i		seepage	piping	slow refill		İ	İ	İ	
İ		į	wetness	İ	İ	Ì	İ	İ	
	-					 		 	
Enstrom	5	Severe:	Severe:	Severe:	Favorable	Wetness	Erodes easily	-	
		seepage	piping	cutbanks cave	 	droughty	wetness	droughty	
				Cuchanks cave	 	İ			
Sax	3	Moderate:	Severe:	Severe:	Frost action	Soil blowing	Erodes easily	Erodes easily	
		seepage	piping	slow refill	subsides	ponding	soil blowing	wetness	
			ponding		ponding	ļ	ponding		
1187:		 	l I		 	l I			
Dora, ponded	90	  Severe:	  Severe:	Severe:	Frost action	  Percs slowly	  Percs slowly	Percs slowly	
zoru, pomaou	20	seepage	hard to pack	slow refill	percs slowly	ponding	ponding	wetness	
i		İ	ponding	İ	ponding	i		İ	
				İ		į	İ		
Seelyeville, ponded	4	Severe:	Severe:	Severe:	Frost action	Ponding	Ponding	Wetness	
		seepage	excess humus	slow refill	ponding				
		 	ponding 		 				
Wildwood	4	Slight	Severe:	Severe:	Frost action	Percs slowly	Percs slowly	Percs slowly	
		İ	hard to pack	slow refill	percs slowly	soil blowing	soil blowing	wetness	
			ponding	İ	ponding	ponding	ponding		
Boash	2	  Moderate:	  Severe:	  Severe:	Frost action	Percs slowly	Wetness	Percs slowly	
boasii	2	seepage	piping	slow refill	percs slowly	wetness	Wethess	wetness	
		Beepage	wetness	BIOW TEITIT	percs slowly	wechess		Wechess	
i		j	j	İ	İ	İ	İ	İ	
1191:									
Sahkahtay	85	Severe:	Severe:	Severe:	Cutbanks cave	Wetness	Too sandy	Wetness	
		seepage	seepage wetness	cutbanks cave	 	droughty	wetness   soil blowing	droughty	
			"CCITEDD				DIT DIOWING		
Cormant	5	Severe:	Severe:	Severe:	Cutbanks cave	Fast intake	Too sandy	Wetness	
İ		seepage	seepage	cutbanks cave		wetness	wetness	droughty	
			piping			droughty	soil blowing		
			wetness						

Table 22.--Water Management--Continued

		L:	imitations for-		Features affecting				
Map symbol and component name	Percent of map unit	Pond reservoir   areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	   Drainage 	   Irrigation 	Terraces and   diversions	Grassed   waterways	
1191:		 	 	 	 	 			
Deerwood	5	Severe:   seepage 	Severe:   seepage   piping   ponding	Severe:   cutbanks cave 	Subsides ponding cutbanks cave	Soil blowing   ponding 	Too sandy soil blowing ponding	Wetness     	
Karlstad	3	  Severe:   seepage 	  Severe:   seepage   piping	  Severe:   cutbanks cave 	  Cutbanks cave     	  Fast intake   wetness   droughty 	  Large stones   too sandy   wetness	  Large stones   droughty 	
Redby	2	Severe:   seepage 	Severe:   seepage   piping   wetness	Severe:   cutbanks cave   	  Cutbanks cave     	  Fast intake   wetness   droughty 	Too sandy   wetness   soil blowing	  Droughty     	
1206:									
Cormant    	55	Severe:   seepage 	Severe:   seepage   piping   wetness	Severe:   cutbanks cave 	Cutbanks cave	Fast intake   wetness   droughty 	Too sandy   wetness   soil blowing	Wetness   droughty 	
Redby	35	  Severe:   seepage 	Severe:   seepage   piping   wetness		  Cutbanks cave     	  Fast intake   wetness   droughty 	  Too sandy   wetness   soil blowing	  Droughty     	
Hiwood	5	  Severe:   seepage 	Severe:   seepage   piping	  Severe:   cutbanks cave 	  Slope   cutbanks cave 	Slope   wetness   droughty	  Too sandy   wetness 	  Droughty   	
Leafriver	5	  Severe:   seepage 	  Severe:   seepage   piping   ponding	  Severe:   cutbanks cave   	  Frost action   subsides   ponding 	  Soil blowing   ponding   	Too sandy soil blowing ponding	  Wetness     	
1214:		 	 	i	 	 			
Mustinka	90	Slight   	Severe:   wetness	Severe:   slow refill 	Frost action   percs slowly 	Percs slowly   wetness	Erodes easily wetness	Erodes easily   percs slowly   wetness	
Espelie	4	Severe:   seepage	Severe:   wetness	Severe:   slow refill   cutbanks cave	  Frost action   percs slowly	  Wetness   soil blowing   droughty	Percs slowly   wetness   soil blowing	Percs slowly   wetness   droughty	
  Wildwood    	4	  Slight   	  Severe:   hard to pack   ponding	  Severe:   slow refill	  Frost action   percs slowly   ponding	  Percs slowly   soil blowing   ponding	  Percs slowly   soil blowing   ponding	  Percs slowly   wetness	

Table 22.--Water Management--Continued

		L:	imitations for-	-		Features a	ffecting	
Map symbol and component name	Percent of map unit	Pond reservoir   areas	Embankments,   dikes, and   levees	Aquifer-fed excavated ponds	   Drainage 	   Irrigation 	Terraces and diversions	Grassed   waterways
1214:				 		 		
Dalbo	2   	Moderate:   seepage 	Moderate:   hard to pack   wetness	Severe:   slow refill	Frost action   percs slowly 	Wetness   	Erodes easily   wetness	Erodes easily   percs slowly 
1274B:	 	 	 	1	 	 		
Redby	40   	Severe:   seepage 	Severe:   seepage   piping   wetness	Severe:   cutbanks cave		Fast intake   wetness   droughty	Too sandy   wetness   soil blowing	Droughty     
Hiwood	30   	  Severe:   seepage 	  Severe:   seepage   piping	  Severe:   cutbanks cave 	  Slope   cutbanks cave   	  Slope   wetness   droughty	  Too sandy   wetness 	  Droughty   
Leafriver, wooded	   15   	  Severe:   seepage 	Severe:   seepage   piping   ponding	  Severe:   cutbanks cave 	  Frost action   subsides   ponding	  Soil blowing   ponding 	Too sandy soil blowing ponding	  Wetness     
Clearriver	   5 	  Severe:   seepage 	  Severe:   seepage	  Severe:   cutbanks cave 	  Cutbanks cave   	  Fast intake   wetness   droughty	Too sandy wetness soil blowing	  Droughty   
Cormant	   5   	  Severe:   seepage 	Severe:   seepage   piping   wetness	  Severe:   cutbanks cave 		  Fast intake   wetness   droughty 	Too sandy wetness soil blowing	  Wetness   droughty 
Zimmerman	   5   	  Severe:   seepage 	  Severe:   seepage   piping	  Severe:   no water 	  Deep to water   	  Fast intake   slope   droughty	Too sandy soil blowing	  Droughty   
1298:	 	l I	 			 		
Borup	90	Severe:   seepage 	Severe:   piping   wetness	Severe:   cutbanks cave 		Wetness     	Wetness   	Wetness   
Augsburg, depressional-	   3 	Severe:   seepage	  Severe:   hard to pack   ponding	Severe:   slow refill   cutbanks cave	percs slowly	  Percs slowly   ponding	  Percs slowly   ponding	  Percs slowly   wetness
Glyndon	   3 	  Severe:   seepage	  Severe:   piping 	  Severe:   cutbanks cave	  Frost action   cutbanks cave	  Wetness   soil blowing	  Erodes easily   wetness   soil blowing	  Erodes easily   

Table 22.--Water Management--Continued

		L:	imitations for-	-	Features affecting				
Map symbol and component name	Percent of map unit	Pond reservoir   areas	Embankments, dikes, and levees	Aquifer-fed   excavated   ponds	   Drainage 	   Irrigation 	Terraces and diversions	Grassed   waterways	
1298: Sago	2	    Moderate:	    Severe:	    Severe:	    Frost action	    Soil blowing	    Too sandy	    Wetness	
Sago	2	seepage	seepage   piping   ponding	cutbanks cave		ponding	soil blowing   ponding		
Skime	2	  Severe:   seepage 	  Severe:   seepage   piping	  Severe:   cutbanks cave 	  Cutbanks cave     	  Wetness   droughty   	Too sandy wetness soil blowing	  Droughty     	
1302:		İ				ì	ì		
Foldahl	85	Severe:   seepage 	Severe:   piping 	Severe:   slow refill   cutbanks cave	Frost action   	Wetness   	Erodes easily   wetness   soil blowing	Erodes easily   	
Kratka	10	Severe:   seepage	Severe:   piping   wetness	Severe:   slow refill   cutbanks cave	  Favorable   	Wetness   soil blowing   droughty	Erodes easily   wetness   soil blowing	Erodes easily   wetness   droughty	
Foxhome	5	  Severe:   seepage	  Severe:   piping	  Severe:   cutbanks cave	  Frost action 	  Wetness   soil blowing	  Wetness   soil blowing	  Favorable 	
1304:		 	 		 	}	}		
Glyndon	85	Severe:   seepage	Severe:   piping	Severe:   cutbanks cave	Frost action   cutbanks cave	Wetness   soil blowing	Erodes easily   wetness   soil blowing	Erodes easily	
Borup	10	  Severe:   seepage	Severe:   piping   wetness	  Severe:   cutbanks cave		  Wetness   	  Wetness   	  Wetness   	
Skime	5	  Severe:   seepage 	  Severe:   seepage   piping	  Severe:   cutbanks cave 		  Wetness   droughty 	Too sandy wetness soil blowing	  Droughty   	
1305:		 	 		 	 	 		
Hilaire	85	Severe:   seepage	Severe:   hard to pack	Severe:   slow refill   cutbanks cave	Frost action   percs slowly	Wetness   droughty 	Percs slowly wetness soil blowing	Percs slowly droughty	
Espelie	11	  Severe:   seepage 	  Severe:   wetness 	  Severe:   slow refill   cutbanks cave	  Frost action   percs slowly 	  Wetness   soil blowing   droughty	  Percs slowly   wetness   soil blowing	  Percs slowly   wetness   droughty	

Table 22.--Water Management--Continued

		L:	imitations for-	-	Features affecting				
Map symbol and component name	Percent of map unit	Pond reservoir   areas	Embankments,   dikes, and   levees	Aquifer-fed   excavated   ponds	   Drainage 	Irrigation	Terraces and   diversions	Grassed   waterways 	
1305: Grano	     2		    Severe:	    Severe:	    Frost action	 			
Grano	2   	Slight   	hard to pack   wetness	slow refill	percs slowly	Percs slowly   wetness 	Percs slowly   wetness	Percs slowly   wetness 	
Redby	2   	  Severe:   seepage 	Severe:   seepage   piping   wetness	Severe:   cutbanks cave	  Cutbanks cave     	Fast intake   wetness   droughty 	Too sandy   wetness   soil blowing	  Droughty   	
1314:		 	 		 				
Tacoosh	90	Severe:   seepage 	Severe:   excess humus   ponding	Severe:   slow refill 	Frost action   subsides   ponding	Ponding   	Ponding	Wetness	
Rifle	   8 	  Severe:   seepage 	Severe:   excess humus   ponding	Moderate:   slow refill	  Frost action   ponding 	  Ponding   	Ponding	  Wetness   	
Sax	   2 	  Moderate:   seepage 	  Severe:   piping   ponding	  Severe:   slow refill 	  Frost action   subsides   ponding	  Soil blowing   ponding 	Erodes easily   soil blowing   ponding	  Erodes easily   wetness 	
1316:		 	 		 				
Wheatville	85 	Severe:   seepage	Severe:   hard to pack	Severe:   slow refill   cutbanks cave	Frost action   percs slowly	Wetness	Percs slowly wetness	Percs slowly	
Augsburg	   13 	  Severe:   seepage 	  Severe:   hard to pack   wetness	  Severe:   slow refill   cutbanks cave	  Frost action   percs slowly	  Percs slowly   wetness	Percs slowly   wetness	  Percs slowly   wetness	
Grano	   2   	  Slight     	  Severe:   hard to pack   wetness	Severe:   slow refill	  Frost action   percs slowly 	  Percs slowly   wetness 	Percs slowly   wetness	  Percs slowly   wetness 	
1326:		İ			İ				
Augsburg, depressional-	45	Severe:   seepage 	Severe:   hard to pack   ponding	Severe:   slow refill   cutbanks cave	Frost action   percs slowly   ponding	Percs slowly   ponding 	Percs slowly ponding	Percs slowly   wetness	
Wabanica, depressional-	   45 	  Moderate:   seepage 	  Severe:   piping   ponding	  Severe:   slow refill 	  Frost action   ponding 	  Ponding   	  Erodes easily   ponding	  Erodes easily   wetness 	

		L:	imitations for-	-	Features affecting			
Map symbol and component name	Percent of	Pond reservoir	Embankments,	Aquifer-fed   excavated	   Drainage	   Irrigation	Terraces and   diversions	Grassed waterways
	map unit	İ	levees	ponds	İ	İ	<u>i</u>	<u>i</u>
1326:	_							
Sax	6	Moderate:   seepage	Severe:   piping	Severe:	Frost action subsides	Soil blowing   ponding	Erodes easily soil blowing	Erodes easily wetness
		seepage	ponding	SIOW TEITIT	ponding	policing	ponding	Wechess
						Ì		
Espelie	2	Severe:	Severe:	Severe:	Frost action	Wetness	Percs slowly	Percs slowly
		seepage	wetness	slow refill	percs slowly	soil blowing	wetness	wetness
		l I	 	cutbanks cave	l I	droughty	soil blowing	droughty
Zippel	2	  Severe:	  Severe:	Severe:	Frost action	Wetness	  Erodes easily	  Erodes easily
22		seepage	piping	cutbanks cave	cutbanks cave		wetness	wetness
			wetness				soil blowing	
1327B:								
Karlstad	65	  Severe:	  Severe:	  Severe:	Cutbanks cave	  Fast intake	  Large stones	  Large stones
Nai is cau	05	seepage	seepage	cutbanks cave		wetness	too sandy	droughty
		İ	piping			droughty	wetness	
						ļ		[
Marquette	25	Severe:	Severe:	Severe:	Deep to water	Fast intake	Too sandy	Droughty
		seepage	seepage	no water	 	slope droughty	soil blowing	
		 	 		 	droughty		
Sahkahtay	7	Severe:	Severe:	Severe:	Cutbanks cave	Wetness	Too sandy	Wetness
		seepage	seepage	cutbanks cave		droughty	wetness	droughty
			wetness				soil blowing	
Redby	3	  Severe:	  Severe:	  Severe:	Cutbanks cave	  Fast intake	Too sandy	Droughty
Ready	,	seepage	seepage	cutbanks cave		wetness	wetness	
		İ	piping	İ	į	droughty	soil blowing	İ
			wetness			ļ		[
1328:								
Northwood, wooded	90	  Severe:	  Severe:	Severe:	  Frost action	Rooting depth	  Erodes easily	  Erodes easily
Northwood, wooded	50	seepage	piping	cutbanks cave		soil blowing	soil blowing	rooting dept
		j	ponding	İ	ponding	ponding	ponding	wetness
	-							
Berner, wooded	5	Severe:   seepage	Severe:   excess humus	Severe:	Frost action subsides	Rooting depth soil blowing	Soil blowing   ponding	Rooting depth
		seepage	ponding	cutbanks cave		ponding	policing	wechess
Grygla	5	Severe:	Severe:	Severe:	Frost action	Wetness	Erodes easily	Erodes easily
		seepage	piping	slow refill	!	soil blowing	wetness	wetness
			wetness	cutbanks cave			soil blowing	

Table 22.--Water Management--Continued

Table 22.--Water Management--Continued

		L	imitations for-	-		Features a	ffecting	
Map symbol and component name	Percent of map unit	Pond reservoir   areas	Embankments, dikes, and levees	Aquifer-fed   excavated   ponds	   Drainage 	Irrigation	Terraces and   diversions	Grassed   waterways
1333:	 	 	 		 		 	
Dora, wooded	90	Severe:   seepage	Severe:   hard to pack   ponding	Severe:   slow refill	Percs slowly subsides ponding	Percs slowly soil blowing ponding	Percs slowly soil blowing ponding	Percs slowly   wetness
Lupton	   <b>4</b> 	  Severe:   seepage	Severe:   excess humus   wetness	  Severe:   slow refill 	  Frost action   subsides 	  Wetness   soil blowing 	  Wetness   soil blowing 	  Wetness   
Wildwood	   <b>4</b> 	  Slight   	  Severe:   hard to pack   ponding	  Severe:   slow refill 	  Frost action   percs slowly   ponding	  Percs slowly   soil blowing   ponding	  Percs slowly   soil blowing   ponding	  Percs slowly   wetness
Auganaush	   2 	  Slight 	  Severe:   wetness	Severe:   slow refill	  Frost action   percs slowly	  Percs slowly   wetness	Percs slowly wetness	  Percs slowly   wetness
1356:		 	 		 		 	
Water, miscellaneous.		į			į	į	į	į
1399B:		 	 		 		 	
Two Inlets	85 	Severe:   seepage	Severe:   seepage	Severe:   no water	Deep to water	Fast intake   slope   droughty	Too sandy soil blowing	Rooting depth droughty
Wurtsmith	   6 	  Severe:   seepage	  Severe:   seepage   piping	  Severe:   cutbanks cave	  Deep to water   	  Fast intake   droughty 	  Too sandy   soil blowing	  Droughty   
Zimmerman	   6 	  Severe:   seepage	Severe:   seepage   piping	Severe:   no water	  Deep to water   	Fast intake   slope   droughty	Too sandy soil blowing	  Droughty   
Meehan	   3   	  Severe:   seepage   	  Severe:   seepage   piping   wetness	Severe:   cutbanks cave	  Too acid   cutbanks cave   	  Fast intake   wetness   droughty 	Too sandy wetness soil blowing	  Wetness   droughty   
1401:								
Grygla, depressional	90	Severe:   seepage	Severe:   piping   ponding	Severe:   slow refill   cutbanks cave	Frost action   ponding 	Soil blowing   ponding 	Erodes easily   soil blowing   ponding	Erodes easily   wetness 
Northwood, wooded	   5 	  Severe:   seepage	  Severe:   piping   ponding	  Severe:   cutbanks cave	  Frost action   subsides   ponding	Rooting depth   soil blowing   ponding	  Erodes easily   soil blowing   ponding	  Erodes easily   rooting dept   wetness

Table 22Water	ManagementContinued
Limitations for	

		L:	imitations for-	-		Features a	ffecting	
Map symbol and component name	Percent of map unit	Pond reservoir   areas	Embankments,   dikes, and   levees	Aquifer-fed excavated ponds	   Drainage 	   Irrigation 	Terraces and diversions	Grassed waterways
1401: Chilgren	     3 	  Moderate:   seepage	  Severe:   piping   wetness	    Moderate:   slow refill 	    Frost action   	  Rooting depth   wetness   soil blowing	    Wetness   soil blowing	  Rooting depth   wetness
Grygla	   2 	  Severe:   seepage   	  Severe:   piping   wetness 	  Severe:   slow refill   cutbanks cave	  Frost action     	  Wetness   soil blowing   	  Erodes easily   wetness   soil blowing	  Erodes easily   wetness 
1402: Leafriver, wooded	90   	  Severe:   seepage	  Severe:   seepage   piping   ponding	  Severe:   cutbanks cave	  Frost action   subsides   ponding	  Soil blowing   ponding	Too sandy soil blowing ponding	  Wetness   
Cormant	   <b>4</b>   	  Severe:   seepage 	  Severe:   seepage   piping   wetness	  Severe:   cutbanks cave   	  Cutbanks cave     	  Fast intake   wetness   droughty	Too sandy wetness soil blowing	  Wetness   droughty 
Tawas	<b>4</b>   	  Severe:   seepage   	Severe:   seepage   piping   wetness	Severe:   slow refill   cutbanks cave	  Frost action   subsides   cutbanks cave 	  Wetness   soil blowing   	  Too sandy   wetness   soil blowing 	  Wetness     
Redby	2     	  Severe:   seepage   	  Severe:   seepage   piping   wetness	Severe:   cutbanks cave 	  Cutbanks cave     	  Fast intake   wetness   droughty 	  Too sandy   wetness   soil blowing	  Droughty     
1404: Berner, wooded	90	  Severe:   seepage	  Severe:   excess humus   ponding	  Severe:   slow refill   cutbanks cave	  Frost action   subsides   ponding	  Rooting depth   soil blowing   ponding	  Soil blowing   ponding 	  Rooting depth   wetness
Lupton	   <b>4</b> 	  Severe:   seepage 	Severe:   excess humus   wetness	Severe:   slow refill	  Frost action   subsides 	  Wetness   soil blowing 	  Wetness   soil blowing 	  Wetness   
Northwood, wooded	   <b>4</b> 	  Severe:   seepage	  Severe:   piping   ponding	  Severe:   cutbanks cave	  Frost action   subsides   ponding	  Rooting depth   soil blowing   ponding	  Erodes easily   soil blowing   ponding	  Erodes easily   rooting depth   wetness
Grygla	   2   	  Severe:   seepage   	  Severe:   piping   wetness	  Severe:   slow refill   cutbanks cave	  Frost action     	  Wetness   soil blowing   	  Erodes easily   wetness   soil blowing	  Erodes easily   wetness 

Table 22.--Water Management--Continued

		L:	imitations for-	-		Features a	ffecting	
Map symbol and component name	Percent of map unit	Pond reservoir   areas	Embankments,   dikes, and   levees	Aquifer-fed   excavated   ponds	   Drainage 	Irrigation	Terraces and   diversions 	Grassed   waterways
1405:	 	 	 		 		 	
Lallie	90   	Slight   	Severe:   hard to pack   ponding	Severe:   slow refill 	Frost action   percs slowly   ponding	Erodes easily   percs slowly   ponding	Erodes easily   percs slowly   ponding	Erodes easily   excess salt   wetness
Sax	   <b>7</b> 	  Moderate:   seepage 	  Severe:   piping   ponding	  Severe:   slow refill 	  Frost action   subsides   ponding	  Soil blowing   ponding 	  Erodes easily   soil blowing   ponding	  Erodes easily   wetness 
Wabanica	   3   	  Moderate:   seepage 	  Severe:   piping   wetness	Moderate:   slow refill	  Frost action     	  Wetness   	  Wetness     	  Wetness   
1414:	! 	 	 		 		 	
Nereson, very cobbly	85   	Severe:   seepage	Severe:   seepage   piping	Moderate:   slow refill   deep to water	Frost action   	Wetness   soil blowing 	Wetness   soil blowing 	Favorable   
Percy, very cobbly	   10 	  Moderate:   seepage 	Severe:   piping   wetness	  Moderate:   slow refill 	  Frost action   	  Wetness   	  Wetness   	  Wetness   
Pelan	3   	  Severe:   seepage 	  Severe:   piping 	Moderate:   slow refill   cutbanks cave   deep to water	  Favorable     	  Wetness   droughty 	  Wetness   soil blowing   	Rooting depth  droughty 
Foxhome	   2 	  Severe:   seepage	  Severe:   piping	  Severe:   cutbanks cave	  Frost action 	  Wetness   soil blowing	  Wetness   soil blowing	  Favorable 
1428:		<u> </u>	 		l I		İ	
Karlsruhe	85   	Severe:   seepage	Severe:   seepage   wetness	Severe:   cutbanks cave 	1	Wetness   soil blowing   droughty	Too sandy wetness soil blowing	Droughty   
Syrene	   10 	  Severe:   seepage 	  Severe:   seepage   wetness	  Severe:   cutbanks cave 		Wetness   soil blowing   droughty	  Erodes easily   too sandy   wetness	  Erodes easily   wetness   droughty
Ulen	   5 	  Severe:   seepage	  Severe:   seepage   piping	  Severe:   cutbanks cave	  Cutbanks cave   	  Wetness   droughty	Too sandy wetness soil blowing	  Droughty   

		L:	imitations for-	· <b>-</b>		Features	affecting	
Map symbol and	Percent	Pond reservoir	Embankments,	Aquifer-fed		1	Terraces and	Grassed
component name	of	areas	dikes, and	excavated	Drainage	Irrigation	diversions	waterways
	map unit	<u> </u>	levees	ponds	İ	<u> </u>	<u>i</u>	<u>i</u>
1444:						 		
Wurtsmith	85	Severe:	Severe:	Severe:	Deep to water	Fast intake	Too sandy	Droughty
		seepage	seepage	cutbanks cave		droughty	soil blowing	
			piping		İ			İ
Meehan	10	  Severe:	  Severe:	  Severe:	Too acid	  Fast intake	Too sandy	Wetness
		seepage	seepage	cutbanks cave	cutbanks cave	wetness	wetness	droughty
		i	piping	i	İ	droughty	soil blowing	
		į	wetness	į	į			į
Clearriver	2	  Severe:	  Severe:	Severe:	Cutbanks cave	  Fast intake	Too sandy	  Droughty
		seepage	seepage	cutbanks cave		wetness	wetness	
						droughty	soil blowing	
Two Inlets	2	  Severe:	  Severe:	Severe:	Deep to water	  Fast intake	Too sandy	Rooting depth
		seepage	seepage	no water	 	slope droughty	soil blowing	droughty
Cormant	1	  Severe:	  Severe:	  Severe:	Cutbanks cave	  Fast intake	Too sandy	Wetness
Cormant				cutbanks cave	Cutbanks cave		wetness	1
		seepage	seepage	cutbanks cave	l I	wetness   droughty	wetness   soil blowing	droughty
			piping   wetness			aroughty	soil blowing	
1448:						 		
Grano	90	Slight	Severe:	Severe:	Frost action	Percs slowly	Percs slowly	Percs slowly
		I .	hard to pack	slow refill	percs slowly	slow intake	wetness	wetness

Table 22.--Water Management--Continued

		L	imitations for-	-	Features affecting				
Map symbol and component name	Percent of map unit	Pond reservoir	Embankments, dikes, and	Aquifer-fed   excavated   ponds	   Drainage	   Irrigation	Terraces and diversions	Grassed waterways	
1444:	map unic	   	Tevees		<u>                                     </u>	   		 	
Wurtsmith	85	Severe:   seepage	Severe:   seepage   piping	Severe:   cutbanks cave	  Deep to water   	  Fast intake   droughty 	Too sandy soil blowing	Droughty   	
Meehan	10	  Severe:   seepage 	Severe:   seepage   piping   wetness	  Severe:   cutbanks cave 	  Too acid   cutbanks cave   	  Fast intake   wetness   droughty	Too sandy wetness soil blowing	  Wetness   droughty 	
Clearriver	2	  Severe:   seepage	  Severe:   seepage 	  Severe:   cutbanks cave 	  Cutbanks cave   	  Fast intake   wetness   droughty	Too sandy   wetness   soil blowing	  Droughty   	
Two Inlets	2	  Severe:   seepage 	  Severe:   seepage 	Severe:   no water	  Deep to water   	  Fast intake   slope   droughty	  Too sandy   soil blowing	  Rooting dept    droughty 	
Cormant	1	  Severe:   seepage 	Severe:   seepage   piping   wetness	  Severe:   cutbanks cave   	  Cutbanks cave     	  Fast intake   wetness   droughty	Too sandy   wetness   soil blowing	  Wetness   droughty 	
1448: Grano	90	    Slight   	  Severe:   hard to pack   wetness	  Severe:   slow refill	  Frost action   percs slowly	  Percs slowly   slow intake   wetness	  Percs slowly   wetness	  Percs slowly   wetness	
Percy	5	  Moderate:   seepage 	  Severe:   piping   wetness	  Moderate:   slow refill 	  Frost action   	  Wetness   	Wetness	  Wetness   	
Augsburg	3	  Severe:   seepage 	  Severe:   hard to pack   wetness	  Severe:   slow refill   cutbanks cave	  Frost action   percs slowly 	  Percs slowly   wetness 	Percs slowly   wetness	  Percs slowly   wetness 	
Woodslake	2	  Slight     	  Severe:   hard to pack   ponding	  Severe:   slow refill 	  Percs slowly   ponding   	  Slow intake   ponding   droughty 	Percs slowly   ponding	  Percs slowly   wetness   droughty	
1449: Grano	90	  Slight   	  Severe:   hard to pack   wetness	  Severe:   slow refill	  Frost action   percs slowly	  Percs slowly   wetness	  Percs slowly   wetness	  Percs slowly   wetness	

Table 22.--Water Management--Continued

		L:	imitations for-	-	Features affecting				
Map symbol and component name	Percent of	Pond reservoir areas	dikes, and	Aquifer-fed   excavated	   Drainage	   Irrigation	Terraces and   diversions	Grassed waterways	
	map unit		levees	ponds			1		
1449:		 	 		 	1			
Percy	5	Moderate:   seepage	Severe:   piping   wetness	Moderate:   slow refill	  Frost action   	Wetness 	Wetness	Wetness	
Augsburg	   3 	  Severe:   seepage	  Severe:   hard to pack   wetness	  Severe:   slow refill   cutbanks cave	  Frost action   percs slowly	  Percs slowly   wetness	  Percs slowly   wetness	  Percs slowly   wetness	
Woodslake	   2 	  Slight   	  Severe:   hard to pack   ponding	  Severe:   slow refill 	  Percs slowly   ponding 	Slow intake   ponding   droughty	Percs slowly   ponding	  Percs slowly   wetness   droughty	
1807:		 	 						
Cathro, ponded	90	Severe:   seepage	Severe:   piping   ponding	Severe:   slow refill 	Frost action   ponding 	Ponding   	Ponding	Wetness   	
Haug	   <b>4</b> 	  Moderate:   seepage 	Severe:   piping   ponding	  Moderate:   slow refill 	  Frost action   ponding 	Soil blowing   ponding	Soil blowing   ponding	  Wetness   	
Seelyeville, ponded	   <b>4</b> 	  Severe:   seepage 	Severe:   excess humus   ponding	  Severe:   slow refill 	  Frost action   ponding 	  Ponding   	Ponding	  Wetness   	
Percy	   2 	  Moderate:   seepage	Severe:   piping   wetness	  Moderate:   slow refill	  Frost action   	  Wetness 	Wetness	  Wetness 	
1808:	 	1	 		 		[		
Markey, ponded	90	Severe:   seepage 	Severe:   seepage   piping   ponding	Severe:   slow refill   cutbanks cave	Frost action   subsides   ponding	Soil blowing   ponding 	Too sandy   soil blowing   ponding	Wetness   	
Leafriver	   <b>4</b>   	  Severe:   seepage   	  Severe:   seepage   piping   ponding	  Severe:   cutbanks cave   	  Frost action   subsides   ponding	  Soil blowing   ponding 	Too sandy   soil blowing   ponding	  Wetness   	
Seelyeville, ponded	   <b>4</b> 	  Severe:   seepage	  Severe:   excess humus   ponding	  Severe:   slow refill	  Frost action   ponding	  Ponding   	  Ponding 	  Wetness   	

		L	imitations for-			Features a	ffecting	
Map symbol and component name	Percent   of   map unit	Pond reservoir	Embankments,   dikes, and   levees	Aquifer-fed   excavated   ponds	   Drainage	   Irrigation	Terraces and   diversions	Grassed   waterways
	map direc	1	167668	ponds	l			
1808: Cormant	   2   	  Severe:   seepage	  Severe:   seepage   piping   wetness	  Severe:   cutbanks cave	  Cutbanks cave   	  Fast intake   wetness   droughty	  Too sandy   wetness   soil blowing	  Wetness   droughty 
1918:	 		 		 			
Croke	   85   	Severe:   seepage 	Severe:   hard to pack	Severe:   slow refill   cutbanks cave	  Frost action   percs slowly 	Percs slowly   wetness	Percs slowly wetness soil blowing	  Percs slowly   
Augsburg	   13 	  Severe:   seepage 	Severe:   hard to pack   wetness	Severe:   slow refill   cutbanks cave	  Frost action   percs slowly 	Percs slowly   wetness	Percs slowly   wetness	Percs slowly   wetness
Grano	   2 	  Slight   	  Severe:   hard to pack   wetness	  Severe:   slow refill	  Frost action   percs slowly	  Percs slowly   wetness	  Percs slowly   wetness	  Percs slowly   wetness
1923B:	 	 	 		 			
Garnes, very stony	   85 	Moderate:   seepage 	Severe:   piping 	Moderate:   slow refill   deep to water	Frost action 	Wetness   	Wetness   	Rooting depth
Chilgren	   10 	  Moderate:   seepage 	  Severe:   piping   wetness	  Moderate:   slow refill 	  Frost action   	Rooting depth  wetness  soil blowing	  Wetness   soil blowing 	  Rooting depth   wetness 
Eckvoll	   3 	  Severe:   seepage 	  Moderate:   piping   wetness	Severe:   slow refill   cutbanks cave	  Frost action   	Fast intake   wetness   soil blowing	Erodes easily   wetness   soil blowing	  Erodes easily   
Pelan	2   	  Severe:   seepage 	  Severe:   piping 	Moderate:   slow refill   cutbanks cave   deep to water	1	  Wetness   droughty 	Wetness   soil blowing 	  Rooting depth   droughty 
1984:	 	 	 		 			
Leafriver	90     	  Severe:   seepage 	  Severe:   seepage   piping   ponding	  Severe:   cutbanks cave   	  Frost action   subsides   ponding	Soil blowing   ponding 	Too sandy soil blowing ponding	Wetness     

Table 22.--Water Management--Continued

Table 22.--Water Management--Continued

		L:	imitations for-	-		Features a	affecting	
Map symbol and	Percent	Pond reservoir	Embankments,	Aquifer-fed			Terraces and	Grassed
component name	of	areas	dikes, and	excavated	Drainage	Irrigation	diversions	waterways
	map unit		levees	ponds	1	<u> </u>	1	1
1984:		 	 		 	 		 
Cormant	5	Severe:   seepage 	Severe:   seepage   piping   wetness	Severe:   cutbanks cave   	Cutbanks cave	Fast intake   wetness   droughty 	Too sandy   wetness   soil blowing	Wetness   droughty 
Markey	3	Severe:   seepage	Severe:   seepage   piping   ponding	Severe:   slow refill   cutbanks cave	Frost action   subsides   ponding	Soil blowing   ponding 	Too sandy   soil blowing   ponding	  Wetness     
Redby	2	  Severe:   seepage   	  Severe:   seepage   piping   wetness	  Severe:   cutbanks cave     	  Cutbanks cave     	  Fast intake   wetness   droughty 	Too sandy   wetness   soil blowing	  Droughty     
w:							İ	İ
Water.		İ	İ	İ	İ	İ	İ	İ

# **Soil Properties**

Data relating to soil properties are collected during the course of the soil survey. The data and the estimates of soil and water features, listed in tables, are explained on the following pages.

Soil properties are determined by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine grain-size distribution, plasticity, and compaction characteristics.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help to characterize key soils.

The estimates of soil properties shown in the tables include the range of grain-size distribution and Atterberg limits, the engineering classification, and the physical and chemical properties of the major horizons of each soil. Pertinent soil and water features also are given.

## **Engineering Index Properties**

Table 23 gives estimates of the engineering classification and of the range of index properties for the major horizons of each soil in the survey area. Most soils have horizons of contrasting properties within the upper 5 or 6 feet.

Depth to the upper and lower boundaries of each horizon is indicated. The range in depth and information on other properties of each horizon are given in the series descriptions under the heading "Soil Series and Detailed Soil Map Units."

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less

than 52 percent sand. If the content of particles coarser than sand is as much as 15 percent, an appropriate modifier is added, for example, "gravelly." Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system (ASTM, 2001) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2000).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to grain-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, SP-SM.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of grain-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated

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sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and plasticity index (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

The estimates of grain-size distribution, liquid limit, and plasticity index are generally rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is omitted in the table.

## **Physical and Chemical Properties**

Tables 24 and 25 show estimates of some characteristics and features that affect soil behavior. These estimates are given for the major horizons of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each horizon is indicated. The range in depth and information on other properties of each horizon are given in the series descriptions under the heading "Soil Series and Detailed Soil Map Units."

In table 24, *clay* as a soil separate, or component, consists of mineral soil particles that are less than 0.002 millimeter in diameter. The estimated clay content of each major soil horizon is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The amount and kind of clay greatly affect the fertility and physical condition of the soil. They determine the ability of the soil to adsorb cations and to retain moisture. They influence linear extensibility, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earth-moving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at <sup>1</sup>/<sub>3</sub>-bar moisture tension. Weight is determined after drying the soil at 105 degrees C. In table 24, the estimated moist bulk density of each major soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter.

Bulk density data are used to compute linear extensibility, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. A bulk density of more than 1.6 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Permeability refers to the ability of a soil to transmit water or air. Permeability estimates indicate the rate of downward movement of water when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems, irrigation systems, and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each major soil horizon. The capacity varies, depending on soil properties that affect the retention of water and the depth of the root zone. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Linear extensibility percent is the linear expression of the volume difference of natural soil fabric at ½-bar or ½-0-bar water content and oven dryness. The volume change is reported as percent change for the whole soil. Volume change occurs mainly because of the interaction of clay minerals with water and varies with the amount and type of clay minerals in the soil. The size of the load on the soil and the magnitude of the change in soil moisture content influence the amount of swelling of soils in place. Laboratory measurements of swelling of undisturbed clods were made for many soils. For others, swelling was estimated on the basis of the kind and amount of clay minerals in the soil and on measurements of similar soils

Linear extensibility of 3 percent or more can cause damage to buildings, roads, and other structures. Special design is often needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In table 24, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be

maintained or increased by returning crop residue to the soil. Organic matter affects the available water capacity, infiltration rate, and tilth. It is a source of nitrogen and other nutrients for crops.

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) to predict the average rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, very fine sand, sand, and organic matter (as much as 4 percent) and on soil structure and permeability. Values of K range from 0.02 to 0.69. The higher the value, the more susceptible the soil is to sheet and rill erosion.

Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

*Erosion factor Kf* indicates the erodibility of the fineearth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their resistance to wind erosion in cultivated areas. The groups indicate the susceptibility of soil to wind erosion. Soils are grouped according to the following distinctions:

- 1. Coarse sands, sands, fine sands, and very fine sands. These soils generally are not suitable for crops. They are extremely erodible, and vegetation is difficult to establish.
- 2. Loamy coarse sands, loamy sands, loamy fine sands, loamy very fine sands, and sapric soil material. These soils are very highly erodible. Crops can be grown if intensive measures to control wind erosion are used.
- 3. Coarse sandy loams, sandy loams, fine sandy loams, and very fine sandy loams. These soils are highly erodible. Crops can be grown if intensive measures to control wind erosion are used.
- 4L. Calcareous loams, silt loams, clay loams, and silty clay loams that have more than 5 percent finely divided calcium carbonate. These soils are highly erodible. Crops can be grown if intensive measures to control wind erosion are used.
- 4. Clays, silty clays, noncalcareous clay loams, and silty clay loams that are more than 35 percent clay. These soils are moderately erodible. Crops can be grown if measures to control wind erosion are used.
- 5. Noncalcareous loams and silt loams that are less than 20 percent clay and sandy clay loams, sandy

clays, and hemic soil material. These soils have less than 5 percent finely divided calcium carbonate. They are moderately erodible. Crops can be grown if measures to control wind erosion are used.

- 6. Noncalcareous loams and silt loams that are more than 20 percent clay and noncalcareous clay loams that are less than 35 percent clay. These soils have less than 5 percent finely divided calcium carbonate. They are moderately erodible. Crops can be grown if ordinary measures to control wind erosion are used.
- 7. Silts, noncalcareous silty clay loams that are less than 35 percent clay, and fibric soil material. These soils have less than 5 percent finely divided calcium carbonate. They are very slightly erodible. Crops can be grown if ordinary measures to control wind erosion are used.
- 8. Soils that are not subject to wind erosion because of rock fragments on the surface or because of surface wetness.

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

In table 25, cation-exchange capacity is the total amount of extractable bases that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. The ability to retain cations reduces the hazard of ground-water pollution.

Soil reaction is a measure of acidity or alkalinity and is expressed as a range in pH values. The range in pH of each major horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Calcium carbonate equivalent is the percent of carbonates, by weight, in the fraction of the soil less than 2 millimeters in size. The availability of plant nutrients is influenced by the amount of carbonates in the soil. Incorporating nitrogen fertilizer into calcareous soils helps to prevent nitrite accumulation and ammonium-N volatilization.

Gypsum is expressed as a percent, by weight, of

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hydrated calcium sulfates in the fraction of the soil less than 20 millimeters in size. Gypsum is partially soluble in water. Soils that have a high content of gypsum may collapse if the gypsum is removed by percolating water.

#### **Water Features**

Soil moisture status is an estimate of the fluctuating water content in a soil. It greatly influences vegetation type and plant growth; physical properties of soils, such as permeability, workability, strength, linear extensibility, and frost action; and chemical interactions and transport. Many other properties, qualities, and interpretations also are affected. Soil moisture status is important in the classification of soils, wetland, and habitat.

Table 26 gives estimates of soil moisture for each component of a map unit at various depths for every month of the year. The depths displayed are representative values that are indicative of conditions that occur most of the time. *Dry* indicates a moisture condition under which most plants (especially crops) cannot extract water for growth. Moist indicates a moisture condition under which soil water is most readily available for plant growth. Wet indicates a condition under which water will stand in an unlined hole or at least a condition under which the soil is too wet for the growth of most agricultural species. A moisture status of 4.0-6.7 (wet) indicates that most of the time the component is saturated at some depth between 4.0 feet and 6.7 feet during the month designated. In some years the soil may be saturated at a depth of less than 4.0 feet or more than 6.7 feet; however, field observations indicate that the soil will be saturated between these depths in most years. In the summer, the soil may show the effects of drying plus intermittent rains that result in a moist or wet layer over a dry layer that becomes moist or wet again.

Hydrologic soil groups are groups of soils that, when saturated, have the same runoff potential under similar storm and ground cover conditions. Table 26 gives the hydrologic group that has been assigned to each component of a map unit. The soil properties that affect the runoff potential are those that influence the minimum rate of infiltration in a bare soil after prolonged wetting and when the soil is not frozen. These properties include the depth to a zone in which the soil moisture status is wet, the infiltration rate, permeability after prolonged wetting, and the depth to a very slowly permeable horizon or horizons. The influences of ground cover and slope are treated independently and are not taken into account in hydrologic soil groups.

In the definitions of the hydrologic soil groups, the infiltration rate is the rate at which water enters the soil at the surface and is controlled by surface conditions. The transmission rate is the rate at which water moves through the soil and is controlled by properties of the soil horizons.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist chiefly of very deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have a moderately fine to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a horizon or horizons that impede the downward movement of water or soils that have a moderately fine or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clayey soils that have a high linear extensibility; soils that have a zone, high in the profile, in which the soil moisture status is wet on a permanent basis; soils that have a claypan or clay horizon or horizons at or near the surface; and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas.

Flooding, the temporary covering of the soil surface by flowing water, is caused by overflow from streams or by runoff from adjacent slopes. Shallow water standing or flowing for short periods after rainfall or snowmelt is not considered flooding. Standing water in marshes and swamps or in closed depressions is considered to be ponding.

Table 27 gives estimates of the frequency and duration of flooding for every month of the year. Flooding frequency is the annual probability of a flood event expressed as a class. *None* indicates no reasonable possibility of flooding (the chance of flooding is nearly 0 percent in any year, or flooding is likely less than once in 500 years). *Very rare* indicates that flooding is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year, or flooding

is likely less than once in 100 years but more than once in 500 years). Rare indicates that flooding is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year, or flooding is likely 1 to 5 times in 100 years). Occasional indicates that flooding occurs infrequently under usual weather conditions (the chance of flooding is 5 to 50 percent in any year, or flooding is likely 5 to 50 times in 100 years). Frequent indicates that flooding is likely to occur often under usual weather conditions (the chance of flooding is more than 50 percent in any year, or flooding is likely more than 50 times in 100 years; but the chance of flooding is less than 50 percent in all months in any year). Very frequent indicates that flooding is likely to occur very often under usual weather conditions (the chance of flooding is more than 50 percent in all months of any year).

Flooding duration is the average duration of inundation per flood occurrence expressed as a class. *Extremely brief* is 0.1 hour to 4.0 hours; *very brief* is 4 to 48 hours; *brief* is 2 to 7 days; *long* is 7 to 30 days; and *very long* is more than 30 days. About two-thirds to three-fourths of all flooding occurs during the stated period.

The information on flooding is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and level of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

*Ponding* is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation.

Table 28 gives estimates of the frequency, duration, and depth of ponding for every month of the year. The depths displayed are representative values that are indicative of conditions that occur most of the time.

Ponding frequency is the number of times ponding occurs over a period of time. *None* indicates no reasonable possibility of ponding (the chance of ponding is nearly 0 percent in any year). *Rare* indicates that ponding is unlikely but possible under unusual weather conditions (the chance of ponding ranges from nearly 0 percent to 5 percent in any year, or ponding is likely 0 to 5 times in 100 years). *Occasional* indicates that ponding is expected

infrequently under usual weather conditions (the chance of ponding ranges from 5 to 50 percent in any one year, or ponding is likely 5 to 50 times in 100 years). *Frequent* indicates that ponding is likely to occur under usual weather conditions (the chance of ponding is more than 50 percent in any year, or ponding is likely more than 50 times in 100 years).

Ponding duration is the average length of time of the ponding occurrence. It is expressed as *very brief* (less than 2 days), *brief* (2 to 7 days), *long* (7 to 30 days), and *very long* (more than 30 days).

### **Soil Features**

Table 29 gives estimates of several important soil features used in land use planning that involves engineering considerations. These features are described in the following paragraphs.

Subsidence is the settlement of organic soils or of saturated mineral soils of very low density. Subsidence generally results from either desiccation and shrinkage or oxidation of organic material, or both, following drainage. Subsidence takes place gradually, usually over a period of several years. The table shows the expected initial subsidence, which usually is a result of drainage, and total subsidence, which results from a combination of factors.

Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, permeability, content of organic matter, and depth to a zone in which the soil moisture status is wet are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a saturated zone high in the profile during the winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage to pavements and other rigid structures.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be

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needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low, moderate,* or *high,* is based on soil drainage

class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as *low, moderate,* or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

Table 23.--Engineering Index Properties

(Absence of an entry indicates that the data were not estimated.)

Map symbol	   Percent	Depth	USDA texture	Classif	ication	i	ments		rcentage sieve nu	_	ng		   Plas-
and component name	of map unit			Unified	AASHTO	>10	3-10		10	40	200	limit	ticity  index
component name	map unit	In	<u> </u>		AASHIO	Pct	Pct	-	10	10	200	Pct	Index
47:	 		 	 	 	 	 	 	 		 		
Colvin	85	0-11	Silty clay loam	CL	A-6, A-7	0	0	100	100	90-100	80-95	35-50	15-30
	   	11-41   	Silt loam,   silty clay   loam	CL	A-6, A-7   	0   	0   	100   	100   	90-100	80-95   	25-50   	10-30   
		41-80	Loam, silt loam, silty clay loam	  -  CT	A-6, A-7   	0   	0   	100   	100   	90-100	70-95   	25-50	10-25
Bearden	l 5	   0-7	Silt loam	CL, CL-ML	  A-6, A-4	0	l I 0	100	100	90-100	  70-90	20-40	5-20
			Silty clay   loam, silt   loam		A-6, A-7 	0   	0   	100   	100 	90-100	70-95 	25-55	10-30
		32-80	Silty clay   loam, silt   loam, loam	  CH, CL   	A-6, A-7   	0   	0   	100   	   100   	90-100	70-95   	25-55	10-30   
Grano	l 5	   0-13	Clay	CH, CL	  A-7	0	0	95-100	  90-97	80-95	  70-95	45-80	20-50
	 	13-54	Clay, silty   clay, silty   clay loam	CH, CL   	<b>A-7</b>   	0   	0   	95-100   	90-97   	80-95	70-95   	40-80	20-50
		54-80	Stratified silt   loam to clay,   clay, silty   clay, silty   clay loam	CL, CH     	<b>A-7</b>     	0	0	95-100     	90-100	80-97	75-95     	40-80	20-50
Sax	   5	   0-15	Muck	  PT	  A-8	   0	   0		 		 		
Jax			Mucky silt   loam, silt   loam, silty   clay loam	1	A-4, A-6   	0	0   0   	100     	100     	90-100	60-85     	20-40	5-15     
		24-39	Silt loam,   silty clay   loam	CL, CL-ML	  A-4, A-6 	0   	     	100   	   100 	90-100	60-85	20-40	5-15   
		39-71   	Silt loam,   silty clay   loam, very   fine sandy   loam	CL, ML, CL-ML       	A-4, A-6     	0     	0     	100       	100       	90-100	50-90     	16-40     	NP-15     
	 	71-80   	Silty clay   loam, silty   clay, clay	CL, CH     	<b>A-7</b>     	0     	0     	100     	100     	90-100	75-95     	40-80     	15-50     

Map symbol	Percent	Depth	USDA texture	Classif: 	ication	Fragi	ments		rcentag sieve n	_	ng	  Liquid	   Plas
and	of					>10	3-10	i				limit	1
component name	map unit		İ	Unified	AASHTO	inches	inches	4	10	40	200	İ	index
		In				Pct	Pct					Pct	
48B:			 	 	 	 		 	 	 	 		
Hiwood	85	0-3	Fine sand	SM, SC-SM	A-2, A-3	0	0	100	95-100	80-95	5-25	j	NP
	   	3-22	Sand, fine   sand, loamy   sand	SM, SC-SM   	A-2, A-3   	0   	0   	100   	95-100   	80-95   	5-20   	   	NP   
		22-80	Sand, fine sand	SP, SP-SM	A-2, A-3	0 	0	100	95-100	80-95	1-12		NP
Redby	7	0-3	Loamy fine sand	  SM	A-2, A-3	0	0	100	95-100	85-95	5-25	0-20	NP-3
j	j		Fine sand, sand		A-2, A-3	0	0	100	95-100	80-95	5-35		NP-3
		28-80	Fine sand, sand	SP, SP-SM	A-2, A-3	0	0	100	95-100	80-95	2-12	0-14	NP
Clearriver	3	0-2	Loamy fine sand	SP-SM, SM	  A-2	0	0	95-100	85-100	40-90	10-35	15-25	  NP-10
	į	2-21	Sand, loamy   sand	SM, SP-SM	A-2, A-3	0	0	95-100	85-100	55-90	5-35		NP
	     	21-80	Stratified fine   sand to   gravelly   coarse sand	  SP, SP-SM   	  A-1, A-2, A-3   	0	0-2	  75-100     	  65-85     	  40-65   	0-10   	     	NP   
Cormant	3	0 - 6	  Loamy fine sand	  SM, SP-SM	  A-2, A-3, A-4	   0	   0	100	   100	  80-100	5-40	   0-14	   NP
	   	6-80	Fine sand,   sand, loamy   fine sand	SP-SM, SP, SM   	A-2, A-3   	0   	0   	100   	100   	75-100   	1-20   	0-14	NP   
Zimmerman	2		!		A-2  A-2, A-3 	0   0 	0 0	100   100   1		95-100  60-100 			NP  NP-5 
52:			 	 	 	 	l I	 	 	 	 	 	 
Augsburg	85	0 - 9	Loam	ML, CL, CL-ML	A-4, A-6	0	0	100	100	95-100	50-90	15-40	NP-15
	j   	9-33	Loam, very fine sandy loam, silt loam	ML   	<b>A-4</b> 	0   	0   	100   	100   	95-100   	80-90   	15-30   	NP-10 
	     	33-80	Silty clay,   clay, silty   clay loam	CH   	<b>A-7</b>   	0   	0	95-100	95-100	95-100	95-100   	45-85   	25-65
Croke	5   	0-12	  Very fine sandy   loam	CL, CL-ML, ML	   A-4 	0	0	100	100	  85-100	  50-95 	15-35	  NP-10
	     	12-21	Very fine sandy   loam, silt   loam, loamy   very fine sand	 	   <b>A-4</b> 	   0   	   0   	   100   	   100   	85-100     	  80-95     	  15-35     	NP-10   
	   	21-80	Clay, silty   clay, silty   clay loam	'	   <b>A-7</b> 	   0 	0   	100   	   100 	95-100     	  90-100   	40-75   	20-45

Table 23.--Engineering Index Properties--Continued

Table 23.--Engineering Index Properties--Continued

and	Percent   Depth   of	USDA texture	Classification		İ		į i	sieve n	umber		Liquid	Plas-	
	of	-				>10	3-10	i '					ticity
component name	map unit			Unified	AASHTO		inches	4	10	40	200		index
		In	<u> </u>	<u>'                                     </u>	i i	Pct	Pct	İ	İ	l		Pct	<del></del>
i	i					i		i	i	İ	i I	İ	i
52:	i						! 	i	<u> </u>	İ	! 	İ	i
Grano	5	0-11	Loam	CL-ML, SC-SM	A-4, A-6	i o	0	95-100	90-97	65-85	45-65	20-35	5-15
	i		1	CL, CH	A-7	0	0					40-80	20-50
į	i		loam, silty		İ	j	j	i	į	į	İ	İ	i
į	į		clay, clay		İ	Ì	İ	İ	į	į	İ	İ	į
į	į	41-80	Clay, silty	CH, CL	A-7	0	0	95-100	90-100	80-97	75-95	40-80	20-50
	1		clay, silty										
			clay loam,										
	I		stratified										
			silt loam to										
			clay					!				ļ	
	_ !												
Sago	5	0-14		PT	A-8	0	0   0						
ļ		14-80	Stratified fine sand to silt	SC, CL, ML,	A-2, A-4	0	0	98-100	95-100	70-95	15-85	15-30	2-9
	ļ		loam	SM	 	l I	l I	l I	 	 	 	l I	 
			IOalli		 	l I	 	 	 	 	 	l I	 
59:	ł		 				 	l I	 	 	 	l I	l I
Grimstad	85	0-10	Fine sandy loam	SM, SC-SM	A-2, A-4	0	0	100	100	80-100	15-50	15-30	NP-7
	i				A-2, A-3	0	0	100				15-25	1
į	i		loamy fine		İ	i	İ	İ	i	İ		İ	i
į	i		sand, fine		İ	j	İ	į	į	į	İ	İ	i
ĺ	į		sand			İ	ĺ	ĺ	İ	ĺ		ĺ	İ
		30-80	Sandy loam,	CL, SC, SC-	A-4, A-6	0-1	1-3	95-100	85-100	70-90	40-85	15-40	5-20
			fine sandy	SM, CL-ML									
	I		loam, loam										
								!				ļ	
Strathcona	12		Fine sandy loam		A-2, A-4	0	0					20-30	
	!	10-17		SM, SC-SM	A-2, A-4	0	0	100	95-100	65-85	15-50	20-30	NP-10
			loam, sandy										
ļ			loam, loamy				 			 			
	ļ	17_20		SP-SM, SM	  A-2	0	   0-1	   05_100	  85-100	   60 - 90	  10-30	0-14	   NP
		17-28	sand, fine sand, loamy	or-om, om 	A-2 	0	U-1	 	  03-100	00-00 	±0-30	1 0-14	NP
			fine sand		1		 	l I	 	l I	 	l l	 
		28-80	1	CL-ML, CL	A-4, A-6	0-1	   1-5	95-100	  85-98	70-90	50-70	25-40	5-20
	i		loam, loam,			-	, <b>-</b> -					-5 -5	
i	i		clay loam			i	İ	i	i	İ		i	i
i	i				İ	i	i İ	i	i	i	İ	İ	i

Map symbol	   Percent	   Depth	USDA texture	Classif	ication	Fragi	ments		rcentag sieve n	e passinumber	ng	  Liquid	   Plas-
and	of					>10	3-10					limit	ticity
component name	map unit			Unified	AASHTO	inches	inches	4	10	40	200		index
		In				Pct	Pct					Pct	
59:				 	 			 					
Foxhome	3	0-10	Sandy loam	SM	A-4	0	0-2	95-100	90-100	75-90	35-50	15-30	NP-5
		10-15   	Fine sand,   loamy fine   sand, sand	SW-SM, SM   	A-2, A-3   	0-1   	0-3   	95-100   	90-100   	70-85   	5-35   	0-25	NP - 5   
		15-23     	gravelly sand,   very gravelly   coarse sand,   very gravelly   loamy sand	SP, GP-GM,   GP, SP-SM   	A-1     	0     	2-5     	30-65     	15-45       	5-40     	0-10     	0-20     	NP-1     
		23-80	-	  CL-ML, CL, ML   	  A-4, A-6   	0-1   	   1-5   	  90-100   	  85-100     	  75-90     	  50-80   	20-40	   1-15   
64:			<u> </u>	ļ	į .		į			į	į		į
Ulen	85   		Fine sandy loam  Loamy fine   sand, fine   sand		A-4  A-2 	0   0 	0   0 	100  95-100 		80-100  70-95 			NP-8   NP 
		   16-67	Fine sand	SP-SM, SM	  A-2, A-3	   0	   0	100	  95-100	80-100	   5-35	0-14	   NP
			Very fine sandy   loam, fine   sandy loam			0	0					20-30	
Rosewood	   10	   0-11	  Fine sandy loam	  SC, SC-SM, SM	  A-2, A-4	0	   0	100	  97-100	  65-90	  30-50	15-30	  NP-10
		11-19   	Fine sandy   loam, loamy   fine sand,   sandy loam	SM, SC, SC-SM     	<b>A-2, A-4</b>     	0     	0     	100     	95-100     	60-85     	25-45     	15-30   	NP-10   
		19-65	Fine sand, sand	SM, SP-SM	A-1, A-2, A-3	0	0	85-100	75-95	45-75	5-25	5-15	NP
		65-80   	Fine sand,   sand, coarse   sand	SM, SP-SM   	A-1, A-2, A-3   	0   	0   	85-100   	75-95     	40-80   	5-35   	5-15   	NP   
Redby	3		Loamy fine sand	1	  A-2, A-3	0	0	100	  95-100	  85-95		1	
			Fine sand, sand		A-2, A-3	0	0	1	95-100	1	5-35	1	1
		28-80	Fine sand, sand	SP-SM, SP	A-2, A-3	0	0 	100	95-100	80-95 	2-12	0-14	NP
Rushlake	2	0-8	Loamy sand	SM, SP-SM	A-1-b, A-2-4	0	0	95-100	75-100	  15-60	10-35		NP
		8-80 	gravelly sand, gravelly loamy sand, sand	SP-SM, SP   	A-1-b, A-3   	0	0-10   	55-95   	50-90   	15-60   	2-10	   	NP

Table 23.--Engineering Index Properties--Continued

Table 23.--Engineering Index Properties--Continued

Map symbol	   Percent	Depth	USDA texture	Classif	ication	Fragi	ments		rcentago sieve n	_	ng	  Liquid	
and component name	of map unit			Unified	AASHTO	>10	3-10 inches		10	40	200	limit	ticity  index
сомроненс наме	map unit	In	l l		AASHIO	Pct	Pct	**	10	40	200	Pct	Index
			ļ	į	į	į	į	į	į	į	İ	į	į
65: Foxhome	   85	   0-10	  Sandy loam	  sm	  A-4	0	   0-2	   05_100		   75_90		  15-30	  MD_5
roxnome	65		Fine sand,	SW-SM, SM	A-2, A-3	0-1	1		90-100		5-35	0-25	
			loamy fine			-							
			sand, sand										
		15-23	gravelly sand,	SP-SM, SP,	A-1	0	2-5	30-65	15-45	5-40	0-10	0-20	NP-1
			very gravelly coarse sand,	GP-GM, GP	 		 			 			 
		 	very gravelly		 		 		 	l I	 		 
		i	loamy sand	i	İ	i		İ	İ	İ	İ	i	İ
		23-80	Loam, clay	CL-ML, CL, ML	A-6, A-4	0-1	1-5	90-100	85-100	75-90	50-80	20-40	1-15
			loam, silt					!					
			loam	İ	 		 			 	 		 
Strandquist	12	0-8	Loam	SC-SM, SC,	A-4, A-6	0	0-3	95-100	95-100	  75-90	45-70	20-40	5-20
	j i	İ	İ	CL, CL-ML	İ	j	j	į	į	İ	į	İ	İ
		8-35	gravelly sand,	GP-GM, SP,	A-1	0	2-5	35-75	15-55	5-40	0-10	0-20	NP-3
			gravelly coarse sand,	SP-SM, GP	1								
			very gravelly	1	 		 		 	 	 		 
			sand		İ	i				İ			İ
	į į	35-80	Silty clay	CL-ML, CL,	A-4, A-6	0-1	1-5	95-100	80-100	65-90	35-80	20-40	5-20
			loam, loam,	SC, SC-SM			[						
			sandy loam										
Skagen	   3	   0-9	Loam	CL, CL-ML, ML	  A-4	0-1	0-3	  95-100	  85-100	  75-95	  55-75	20-30	  NP-10
	į į	9-19	Loam, fine	CL-ML, SC-SM	A-4	0-2	1-5	85-100	85-98	55-90	35-70	20-30	5-10
			sandy loam,		!			!					
		10 00	sandy loam	CL-ML, SC-SM		0-2	   1-5		  85-98				   5-10
		19-60	sandy loam,	CL-ML, SC-SM	A-4	0-2	1-5		03-30	55-90	33-70	20-30	5-10
			sandy loam	İ	İ	i		i	i	İ	İ		İ
			İ	İ	ĺ	į	į	į	İ	ĺ	İ	į	ĺ
67: Bearden	   85	   0-7	  Silt loam	CL-ML, CL	  A-6, A-4		   0	   100	   100			20-40	= 20
bearden	85 		Silt loam  Silty clay	CH, CL	A-6, A-4  A-6, A-7	0	0	100	100			25-55	
		, , , , ,	loam, silt					100					
		i	loam	İ	j	j	į	į	į	į	į	i	į
		32-80	Silt loam,	CH, CL	A-6, A-7	0	0	100	100	90-100	70-95	25-55	10-30
			silty clay										
	 	 	loam, loam	[ [	[ [	I	 			l I			l I

Map symbol	Percent	Depth	USDA texture	Classi:	fication	Frag	ments		rcentag	e passi: umber	ng	  Liquid	   Plas-
and	of		į			>10	3-10	ļ				limit	-
component name	map unit	T	1	Unified	AASHTO	Pct	inches	4	10	40	200	Pct	index
		In	l I	 		PCt	PCt 	l I	 	 	 	PCt	l I
67:			i	! 					! 				
Colvin	15	0-11	Silty clay loam	CL	A-6, A-7	0	0	100	100	90-100	80-95	35-50	15-30
		11-41	Silt loam,   silty clay   loam	CL	A-6, A-7	0	0	100	100 	90-100	80-95	25-50	10-30
		41-80		   CL 	A-6, A-7	0     	   0   	   100   	   100   	  90-100     	  70-95     	25-50   	  10-25     
77:			İ	<u> </u>		İ	İ	İ	İ	i	İ	i	İ
Garnes	85	0-9	Fine sandy loam	SM	A-4	0-1	0-3	95-100	85-100	55-75	35-50	20-30	NP-5
		9-14	Clay loam,   sandy clay   loam, loam	CL, SC   	A-4, A-6   	0-1   	0-5   	95-100   	80-100   	70-100   	45-80   	20-40	7-20   
		14-80		SC, SM, ML,   CL 	A-4, A-6   	0-1   	1-5   	95-100   	75-95   	60-90   	35-65   	15-40   	1-15   
Chilgren	10	0-5	  Fine sandy loam 	SC-SM, ML, SM, CL-ML	A-2, A-4	0-1	0-3	90-100	  85-100 	  60-85 	25-55	15-35	  NP-10 
		5-9	Loamy sand, loamy fine sand, fine sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0-1	0-3	75-100     	70-100   	50-85     	15-55     	15-35   	NP-10     
		9-16	Clay loam,   loam, sandy   clay loam	ML, CL, SC, SM	A-4, A-6, A-7	0-1	   1-5   	  75-100   	  70-100 	  60-95   	35-85   	25-50	7-20   
		16-80	Loam, sandy loam, fine sandy loam	SC, ML, SM,	A-4 	0-1	2-5	75-100   	70-100   	50-90   	35-70	20-30	3-10   
Eckvoll	   3	0-6	Loamy fine sand	SM. SC-SM	A-2, A-4	0	0-2	90-100	  85-100	  45-80	25-40	15-20	  NP-7
			Fine sand,   sand, loamy   fine sand	SM, SP-SM	A-1, A-2, A-3		0-2	90-100					NP - 4 
		21-26	Clay loam,   sandy clay   loam, loam	sc, cL 	A-6, A-4, A-7	0	0-5 	   90-100   	  85-98   	  65-95   	  45-75   	25-50	7-25   
		26-80	Loam, clay   loam, fine   sandy loam	  CL, CL-ML   	A-4, A-6, A-7	0-1   	   1-5   	  90-100     	  85-98   	  70-95     	50-80	25-45	   5-20   

Table 23.--Engineering Index Properties--Continued

Table 23.--Engineering Index Properties--Continued

Map symbol	Percent	   Depth	USDA texture	Classif	ication	i	ments		rcentag	_	-		   Plas-
and component name	of map unit	 	İ	Unified	AASHTO	>10	3-10 inches		10	40	200	limit	ticity
component name	Map dire	In	1	Unitied	ARBIITO	Pct	Pct	*	1	40	200	Pct	Index
		ĺ	Ì	į	ļ	į	į	į	į	į	į	į	į
77: Pelan	2     	   0-6   6-12   		  SM, SC-SM  GM, SM, SC,   GC 	  A-2, A-4  A-1, A-2   	   0   0   	   0-3   2-5   		  75-100  25-50   		  30-50   5-35   	1	  NP-5  NP-10   
		   12-24   	loam  Very gravelly   coarse sand,   very gravelly   fine sandy	  SP-SM, GP-GM,   SP, GP 	  A-1, A-2   	   0   	   2-5   	  40-85   	  25-50   	   5-50   	   1-10   	   0-14   	   NP   
		   24-60   	loam  Fine sandy   loam, sandy   loam, loam	  SC, CL, ML,   SM 	  A-4, A-6   	   0-1 	   1-5   	  90-100   	  85-95   	  60-90   	  40-65   	  10-30   	   1-15   
111:		 			i		 	i i	İ	i i			
Hangaard	90     		Sandy loam  Stratified   gravelly   coarse sand,   gravelly sand,   coarse sand	SM  SP-SM, SP     	A-2, A-4  A-1, A-2, A-3   	0 0	1		80-100  55-90 		20-45	       	NP   NP   
Deerwood	   5	   0-14	Muck	   PT	  A-8	   0	   0	 	 	 			
2002.11002			Fine sand,   loamy sand,   fine sandy   loam	SM, SP-SM   	A-2, A-4 	0   	0-5	  95-100   	90-100   	  50-75   	12-50   	0-20	NP - 4   
		   16-80 	Fine sand,   sand, gravelly   sand	!	A-1, A-2, A-3 	0	0-5	  75-100   	  55-100   	  35-70   	1-25	0-14	   NP 
Rushlake	3   	0-8   8-80 	Loamy sand  gravelly sand,   gravelly loamy   sand, sand	  SM, SP-SM  SP, SP-SM 	A-1-b, A-2-4   A-1-b, A-3 	   0   0 			  75-100  50-90 		10-35   2-10 		   NP   NP 
Rosewood	2     		  Fine sandy loam  Fine sandy   loam, loamy   fine sand,   sandy loam	  SC, SC-SM, SM  SM, SC, SC-SM   	·	   0   0 	   0   0 	   100   100   			  30-50  25-45   	  15-30  15-30   	  NP-10  NP-10   
			Fine sand, sand  Fine sand,   sand, coarse   sand	SM, SP-SM SM, SP-SM	A-1, A-2, A-3   A-1, A-2, A-3 	0   0   	0   0 		75-95  75-95 		5-25   5-35 	5-15   5-15   	NP   NP 

Map symbol	   Percent	Depth	USDA texture	Classif	ication	Frag	ments		rcentag sieve n	e passi: umber	ng	  Liquid	   Plas-
and	of	-				>10	3-10	İ				limit	ticity
component name	map unit		İ	Unified	AASHTO	inches	inches	4	10	40	200	j	index
		In	]			Pct	Pct					Pct	
116:							 						
Redby	85	0-3	Loamy fine sand	SM	A-2, A-3	0	0	100	95-100	85-95	5-25	0-20	NP-3
		3-28	Fine sand, sand	SW-SM, SM	A-2, A-3	0	0	100	95-100	80-95	5-35	0-20	NP-3
		28-80	Fine sand, sand	SP-SM, SP	A-2, A-3	0	0	100	95-100	80-95	2-12	0-14	NP
Cormant	8	0-6	Loamy fine sand	SM, SP-SM	A-2, A-3, A-4	0	0	100		80-100		0-14	NP
	 	6-80	Fine sand,   sand, loamy   fine sand	SP-SM, SP, SM   	A-2, A-3   	0   	0   	100   	100   	75-100   	1-20   	0-14	NP   
Hiwood	   6	0-3	  Fine sand	SM, SC-SM	  A-2, A-3	   0	0	100	  95-100	80-95	5-25		   NP
			Sand, fine   sand, loamy   sand	SC-SM, SM	A-2, A-3	0	0		95-100   	1	5-20	 	NP
		22-80	Sand, fine sand	SP-SM, SP	A-2, A-3	0	0	100	95-100	80-95	1-12		NP
Leafriver	1 1	0-13	Muck	  PT	  A-8	0	0						
	   		Loamy sand,   fine sand,   sand	SP-SM, SM, SP   	1	0	0	95-100   	80-100   	1	3-35		NP 
117:						 	 				 		 
Cormant	85     	0 - 6 6 - 8 0	Loamy fine sand  Fine sand,   sand, loamy   fine sand	SP-SM, SM  SM, SP, SP-SM   	A-2, A-3, A-4  A-2, A-3 	0   0   	0   0   	100   100   	100   100   	80-100  75-100 		0-14   0-14 	NP   NP 
Leafriver	7	0-13	Muck	  PT	  A-8	0	0				 		
	 	13-80	Loamy sand, fine sand, sand	SP, SP-SM, SM	A-1-b, A-2,   A-2-4, A-3	0   	0   	95-100	80-100   	45-70   	3-35		NP 
Epoufette	3	0-10	Loamy fine sand	  SM	  A-1, A-2	   0	   0-5	  95-100	  65-95	  45-70	  15-30		   NP
	 	10-20	Sandy loam,   gravelly loamy   sand	SC, SC-SM, SM   	A-2, A-4 	0   	0-5   	95-100	70-95   	60-80   	25-40	15-25 	2-10   
	 	20-60	Stratified   gravelly sand,   coarse sand,   sand	SP-SM, GP,   GP-GM, SP   	A-1, A-2-4,   A-3 	0     	0-10     	50-90     	45-85     	30-60     	0-10   	     	NP     
Redby	3	0-3	  Loamy fine sand	SM	  A-2, A-3	0	   0	100	  95-100	  85-95	   5-25	0-20	  NP-3
	I i	3-28	Fine sand, sand	SM, SW-SM	A-2, A-3	0	0	100	95-100	80-95	5-35	0-20	NP-3
	 	28-80	Fine sand, sand	SP, SP-SM 	A-2, A-3 	0 	0 	100 	95-100 	80-95 	2-12 	0-14 	NP 

Table 23.--Engineering Index Properties--Continued

Table 23.--Engineering Index Properties--Continued

Map symbol	Percent	Depth	USDA texture	Classif	ication	i	ments		_	e passi: umber	ng	  Liquid	
and component name	of     map unit		 	   Unified	AASHTO	>10  inches	3-10  inches	   4	10	40	200	11m1c	ticity  index
		In			   	Pct	Pct	<u>                                     </u>	   			Pct	
117: Grygla,			 	   	   	 	i I	 	   	i I	 	i I	 
depressional	2	0-5	Mucky loamy   fine sand	SC-SM, SM	A-2	0	0 	100 	100 	85-95 	15-35 	0-25	NP-10 
		5-36	Sand, fine   sand, loamy   fine sand	SP-SM, SC-SM,	A-2, A-3 	0	0-1   	95-100	90-100   	70-95   	5-35   	0-20	NP - 5 
		36-80	Loam, fine sandy loam, silt loam	CL, CL-ML   	A-4, A-6   	0-1	0-5   	95-100   	80-100   	70-85   	  50-70   	20-40   	5-20   
133:								İ					
Dalbo	85		Loam	CL, ML	A-4, A-6	0	0	100	100	1	60-100	1	5-15
		15-23	Clay, silty   clay, silty   clay loam	CH, CL   	A-7   	0   	0   	100   	100   	85-100   	75-95   	40-65   	20-40   
		23-80	Silty clay   loam, silty   clay, clay	CH, CL   	A-6, A-7   	0   	0   	100   	95-100   	85-100   	65-95   	40-65   	20-40
Mustinka	10	0-9	Clay loam	CH, CL	  A-7	0	0	100	100	90-100	  70-95	40-52	20-30
		9-35	Silty clay,   silty clay   loam, clay	CH, CL   	<b>A-7</b> 	0   	0   	100   	100   	90-100	75-95   	47-72   	25-44
		35-62	Silty clay   loam, clay   loam, silt   loam	       	<b>A-6, A-7</b>   	0   	0     	100     	95-100     	85-100     	70-95     	31-47     	12-25     
		62-80	Clay loam,   silty clay   loam, loam	  -  CF	A-6, A-7   	0-1	1-5   	95-100   	  85-98   	75-95     	50-90   	31-47   	  12-25   
Moranville	5	0 - 8	Loamy fine sand	SM	A-2	0	0	100	100	65-80	15-35	15-20	NP-5
		8-24	Fine sand,   loamy fine   sand	<b>SM</b>   	A-2, A-4 	0	0   	100   	100   	75-90   	15-50   	10-15   	NP   
			Silty clay loam	1	A-6, A-7	0	0	100	100			35-45	
		42-80	Very fine sandy   loam, silt   loam, silty   clay loam	ML, CL-ML, CL     	A-4, A-6, A-7     	0   	0     	100     	95-100     	80-100     	50-95     	20-45     	5-15     

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Map symbol	Percent	Depth	USDA texture	Classi 	fication	Frag	ments		rcentag sieve n	_	-	  Liquid	   Plas
and	of					>10	3-10					limit	ticit
component name	map unit			Unified	AASHTO	inches	inches	4	10	40	200		index
		In				Pct	Pct					Pct	
145:			İ										
Enstrom	85	0-6 6-29	Loamy fine sand  Fine sand,   sand, loamy   sand	SM, SP-SM  SP-SM, SM 	A-2  A-2, A-3 	0   0 	0   0-3 	100  95-100   	1	1	10-25   5-30 	1	NP  NP-3 
		29-80	Fine sandy   loam, loam,   silty clay   loam	CL-ML, CL,   SC-SM, SC   	A-4, A-6   	0-1     	0-3	90-100       	80-95       	65-90     	35-80	20-40	5-15     
Grygla	10	0-6	Loamy fine sand	SC-SM, SM	A-2	0	0	100	100	85-95	15-35	15-25	  NP-7
		6-26	Sand, fine   sand, loamy   fine sand	SP-SM, SM,	A-2, A-3	0	0-1	95-100	90-100	70-95   	5-35	15-20   	NP - 5
		26-80	Loam, fine   sandy loam,   silt loam	CL-ML, CL   	A-4, A-6   	0-1	0-5   	95-100   	80-100   	70-85   	50-70	20-40	5-20   
Redby	4	0-3	Loamy fine sand	SM	A-2, A-3	0	0	100	95-100	  85-95	5-25	0-20	NP-3
		3-28	Fine sand, sand	SM, SW-SM	A-2, A-3	0	0	100	95-100	80-95	5-35	0-20	NP-3
		28-80	Fine sand, sand	SP-SM, SP	A-2, A-3	0	0	100	95-100	80-95	2-12	0-14	NP
Pelan	1	0 - 6	Sandy loam	SM, SC-SM	A-2, A-4	0	0-3	95-100	75-100	  55-90	30-50	0-20	NP-5
		6-12	Very gravelly   sandy loam,   very gravelly   sandy clay   loam	GM, SC, GC,   SM     	A-1, A-2     	0     	2-5     	45-85       	25-50       	10-45       	5-35	20-30	NP-10       
		12-24	Very gravelly   coarse sand,   very gravelly   fine sandy   loam	SP, GP, SP- SM, GP-GM	A-1, A-2   	0     	2-5     	40-85     	25-50	5-50       	1-10	0-14	NP     
		24-60	Fine sandy   loam, sandy   loam, loam	SC, ML, CL,	A-4, A-6	0-1	1-5   	90-100	85-95 	60-90	40-65	10-30	1-15

Table 23.--Engineering Index Properties--Continued

Table 23.--Engineering Index Properties--Continued

Map symbol	Percent	Depth	USDA texture	Classif	ication	Fragi	ments		rcentage sieve n	-	ng	  Liquid	   Plas-
and component name	of map unit		[ [	Unified	AASHTO	>10	3-10 inches	4	10	40	200	limit	ticity  index
- Compositor name	map and	In				Pct	Pct					Pct	
147:			 	 	 						 	 	
Spooner	85	0-6	  Very fine sandy   loam	ML, SM 	A-4 	0	0	100	100	90-100	  35-55 	20-40	1-10
		6-15   	Loamy very fine   sand, very   fine sandy   loam, loam	CL, SM, SC,   ML   	A-4, A-6     	0   	0     	100	100   	90-100   	35-60   	10-40     	1-15     
		15-22 	Loam, silt loam, silty clay loam	CL, CL-ML 	A-4, A-6 	0	0   	100	100 	90-100	60-85	20-40	5-15   
		22-60	Very fine sandy   loam, silt   loam, sandy   loam	SM, SC, CL,   ML 	A-4, A-6   	0	0	100	100   	90-100	  35-95   	  16-40   	NP-15     
Baudette	5	   0-8	  Fine sandy loam	ML, SM	  A-4	0	0	100	100	  75-95	40-60	  15-25	   NP - 4
		8-10 	Very fine sandy   loam, fine   sandy loam,   silt loam	SM, ML     	<b>A-4</b>     	0	0	100	100	75-100   	40-90   	15-40   	NP-10   
		10-30	Clay loam, silt loam, silty clay loam	ML, CL, CL-ML	A-4, A-6, A-7   	0   	0   	100	100 	95-100   	80-100   	20-50	5-20
		30-80	Silt loam, very   fine sandy   loam, loamy   very fine sand	 	<b>A-4</b>     	0	0	100	100     	95-100	70-100     	20-40	1-10     
Grygla	5	0-6	Loamy fine sand	SM, SC-SM	  A-2	0	0	100	100	  85-95	  15-35	  15-25	   NP - 7
		6-26 	Sand, fine   sand, loamy   fine sand	SC-SM, SP-SM,	A-2, A-3 	0   	0-1	95-100	90-100 	70-95   	5-35 	15-20   	NP - 5 
		26-80	Loam, fine   sandy loam,   silt loam	CL-ML, CL   	  A-4, A-6   	0-1	0-5	95-100	80-100   	70-85 	  50-70   	  20-40   	5-20   
Sago	5	0-14	Muck	PT	A-8	0	0						
		14-80   	Stratified fine   sand to silt   loam	SC, CL, ML,   SM   	A-2, A-4   	0   	0     	98-100	95-100     	70-95   	15-85     	15-30     	2-9     
158B:			į į	į									į
Zimmerman	85	0-6   6-80 	Fine sand  Fine sand,   loamy fine   sand	SM, SP-SM  SM, SP-SM   	A-2  A-2, A-3 	0   0 	0   0   	100 100	95-100  95-100 	95-100  60-100 		15-20   0-20 	NP  NP-5 

0 | 100 | 100 | 90-100|35-95 |16-40 |NP-15

Map symbol   and	Percent   of	Depth	USDA texture	Classif	ication	Fragi	ments 		rcentag sieve n	e passi: umber	ng	  Liquid  limit	
component name	map unit			Unified	AASHTO		3-10  inches	   4	10	40	200		index
		In				Pct	Pct	<u> </u>				Pct	
158B:							 	 		 		 	[ [
Hiwood	6 1	   0-3	Fine sand	SM, SC-SM	A-2, A-3	0	l 0	100	95-100	80-95	5-25	 	   NP
			Sand, fine   sand, loamy   sand		A-2, A-3 	0	0   		95-100   		5-20   	     	NP
		22-80	Sand, fine sand	SP-SM, SP	A-2, A-3	0	0	100	95-100	80-95	1-12		NP
Two Inlets	6	0-2	Loamy sand	  SM	  A-2	0	0-2	  90-100	  85-100	  50-70	  15-30	  15-20	  NP-5
		2-4	Loamy coarse sand	SM 	A-2 	0	0-2 	90-100 	75-100 	35-65 	5-15 	15-20 	NP - 5 
		4-17 	Loamy coarse sand	SM, SP-SM	A-2-4, A-3,   A-1	0	0-3 	90-100 	75-95 	35-65 	5-15 	15-25 	NP - 5 
		17-80 	Sand, coarse   sand	SP, SP-SM   	A-1, A-3 	0   	0-5   	85-95   	75-95   	35-75   	2-10   	   	NP   
Redby	3	0-3	Loamy fine sand		A-2, A-3	0	0	100	95-100	85-95	5-25	0-20	NP-3
		3-28	Fine sand, sand	•	A-2, A-3	0	0	100	95-100	1	5-35		NP-3
		28-80	Fine sand, sand	SP-SM, SP	A-2, A-3 	0	0 	100 	95-100	80-95 	2-12	0-14	NP
167B:				į	į	į					İ	į	į
Baudette	85	0-8	Fine sandy loam		A-4	0	0	100			40-60		
		8-10   	Very fine sandy   loam, fine   sandy loam,   silt loam	SM, ML     	<b>A-4</b>   	0     	0     	100     	100     	75-100     	40-90     	15-40     	NP-10   
		10-30   	Clay loam, silt   loam, silty   clay loam	CL, ML, CL-ML   	A-4, A-6, A-7   	0   	0   	100   	100   	95-100   	80-100   	20-50   	5-20   
		30-80	Silt loam, very   fine sandy   loam, loamy   very fine sand	j 	<b>A-4</b>     	0   0	0	100	100     	95-100	70-100     	20-40	1-10     
Spooner	10	0-6	Very fine sandy   loam	ML, SM	A-4 	0	   0 	100	100	90-100	35-55 	20-40	   1-10 
		6-15	Loamy very fine   sand, very   fine sandy	SC, ML, SM,	A-4, A-6   	0   	0   	100   	100   	90-100   	35-60	10-40	1-15   
		   15-22	loam, loam	CL-ML, CL	  A-4, A-6	0	   0	   100	100	  90-100	  60-85	  20-40	   5-15
				,		1 7							

loam, silty clay loam

loam, silt

loam, sandy loam

22-60 | Very fine sandy | SM, SC, CL, | A-4, A-6

ML

Table 23.--Engineering Index Properties--Continued ŧу

Table 23.--Engineering Index Properties--Continued

Map symbol	Percent	Depth	USDA texture	Classif	ication	i	ments		rcentag sieve n	-	ng	Liquid	
and	of			Unified	AASHTO	>10	3-10	   4	10	40	200	limit	ticity  index
component name	map unit	In	<u>                                     </u>	Unified	AASHTO	Pct	Pct	4	10	40	200	Pct	index
167B:				 	 	 	 	 	 	 	 		
Moranville	5	0-8	Loamy fine sand	SM	A-2	0	0	100	100	65-80	15-35	15-20	NP-5
		8-24	Fine sand,   loamy fine   sand	SM   	A-2, A-4 	0   	0   	100   	100   	75-90   	15-50   	10-15	NP 
j		24-42	Silty clay loam	CL	A-6, A-7	0	0	100	100	90-100	80-95	35-45	15-20
		42-80	Very fine sandy   loam, silt   loam, silty   clay loam	CL-ML, CL, ML     	A-4, A-6, A-7     	0     	0     	100       	95-100       	80-100     	50-95     	20-45     	5-15     
187:				İ	İ	İ	İ	İ		İ	İ	İ	
Haug	90	0-10	Muck	1	A-8	0	0						
		10-16	Mucky sandy   loam, fine   sandy loam,   loam	SM, OL, CL,   ML   	A-4, A-6   	0-1   	0-3   	95-100     	90-100     	70-85     	35-65     	15-40     	1-15   
		16-80	Loam, sandy   loam, fine   sandy loam	ML, CL, SC,   SM 	A-4, A-6   	0-1	1-5   	95-100   	70-100   	60-95   	35-65   	15-40   	1-15
Percy	5	0-10	  Loam 	  SC-SM, SC,   CL-ML, CL	  A-4, A-6 	   0-1 	   0-3 	  90-100 	  85-100 	  70-95 	  35-70 	20-40	   5-15 
		10-25	Loam, fine sandy loam, sandy loam	CL, CL-ML   	A-4   	0-1   	1-5   	85-100   	85-98   	   55-90 	35-70   	20-30	5-10   
		25-80	Loam, fine   sandy loam,   sandy loam	CL, SC, CL-   ML, SC-SM 	<b>A-4</b>     	0-1	1-5   	85-100     	85-98     	55-90     	35-70   	15-30   	5-10
Cathro	3	0-8	Muck	PT	A-8	0	0	i		i	i	i	
		8-40	Muck	PT	A-8	0	0						
		40-80	Sandy loam,   loam, clay   loam	CL, CL-ML, SC, SC-SM	A-4, A-6   	0-1   	0-5   	85-100   	75-100   	60-100   	35-90   	20-40	5-20
Boash	2	0-9	Clay loam	  CL	  A-7	   0	0-2	  95-100	  90-100	  80-100	  70-95	40-50	20-25
		9-29	Clay, silty   clay loam,   silty clay	CL, CH   	A-7   	0   	0-2	95-100   	90-100   	80-100   	70-95   	45-80 	25-50
		29-80	Loam, sandy loam, silt loam	CL, CL-ML 	A-4, A-6 	0-1   	1-5   	95-100   	85-98   	70-95   	50-90   	24-35   	6-15

Table 23.--Engineering Index Properties--Continued

Map symbol	Percent	Depth	USDA texture	Classif	ication	İ	ments		rcentago sieve n	-	ng		   Plas-
and component name	of map unit		 	Unified	   AASHTO	>10  inches	3-10	   4	10	40	200	limit 	ticity
		In	<u> </u>			Pct	Pct	<u> </u>				Pct	
191:						 		 	 	 	 		 
Epoufette	85   	0-10 10-20	Loamy fine sand  Sandy loam,   gravelly loamy   sand	SM, SC-SM, SC	A-1, A-2  A-2, A-4 	0   0 			65-95  70-95 		15-30  25-40 	  15-25   	NP   2-10 
		20-60	Stratified gravelly sand, coarse sand, sand	SP-SM, GP-GM, GP, SP	A-1, A-2-4, A-3	0     	0-10 	50-90     	45-85     	30-60	0-10   	     	NP     
Cormant	5	0 - 6	Loamy fine sand	SM, SP-SM	A-2, A-3, A-4	0	0	100	100	  80-100	5-40	0-14	NP
		6-80	Fine sand,   sand, loamy   fine sand	SP-SM, SP, SM   	A-2, A-3   	0   	0   	100   	100   	75-100   	1-20   	0-14	NP   
Leafriver	5	0-13	Muck	   PT	  A-8	0	   0	 		 	 		
		13-80	Loamy sand, fine sand, sand	SM, SP, SP-SM	A-1-b, A-2, A-2-4, A-3	0	0	95-100	80-100   	45-70   	3-35	   	NP 
Meehan	5	0-8	Loamy sand	  SM	  A-1, A-2	   0	   0	  90-100	  75-100	  40-90	  15-30	0-14	   NP
		8-31	Sand, loamy   sand, loamy   coarse sand	SM, SP-SM, SP   	A-1, A-2, A-3   	<b>0</b>   	0   	90-100   	75-100   	40-90   	3-30   	0-14   	NP   
		31-80	Sand, coarse   sand	SP, SP-SM	A-1, A-2, A-3 	0   	0	90-100	75-100   	40-90   	0-5	0-14   	NP 
202:													į
Meehan	85   	0-8 8-31	Loamy sand  Sand, loamy   sand, loamy   coarse sand		A-1, A-2  A-1, A-2, A-3 	0   0 	0   0 		75-100  75-100 		15-30   3-30 	0-14   0-14 	NP   NP 
		31-80	Sand, coarse	SP, SP-SM	  A-1, A-2, A-3 	0	0	  90-100 	  75-100 	  40-90 	   0-5 	0-14	NP 
Cormant	8	0-6	Loamy fine sand	SP-SM, SM	A-2, A-3, A-4	0	0	100	100	80-100	5-40	0-14	NP
		6-80	Fine sand,   sand, loamy   fine sand	SP-SM, SP, SM   	A-2, A-3   	0   	0   	100     	100     	75-100     	1-20   	0-14   	NP   
Wurtsmith	5	0-5	Loamy sand	SM, SP-SM	  A-1, A-2	0	0	75-100	  75-100	40-75	12-30	0-14	NP
			sand		A-1, A-2, A-3	į	İ	į	75-100	İ	3-30	0-14	NP
		45-80	Coarse sand,   sand	SM, SP, SP-SM   	A-1, A-2, A-3 	0	0 	75-100 	75-100 	40-70 	3-15	0-14	NP 

Table 23.--Engineering Index Properties--Continued

Map symbol	   Percent	Depth	USDA texture	Classif	ication	Fragi	ments		rcentago sieve n	-	_	Liquid	   Plas-
and	of	-			1	>10	3-10	İ					ticity
component name	map unit			Unified	AASHTO	inches	inches	4	10	40	200	j	index
		In			 	Pct	Pct		 	[ ]		Pct	   
202:												İ	
Leafriver	2	0-13	Muck	PT	A-8	0	0						
		13-80	Loamy sand,   fine sand,   sand	SP-SM, SM, SP   	A-1-b, A-2,   A-2-4, A-3 	0	0   	95-100   	80-100   	45-70   	3-35		NP   
205:													
Karlstad	85	0-7	-	SP-SM, SM	A-2, A-3	0-5	0-5	95-100	95-100	75-95	5-35	15-25	NP-4
		7-10	Coarse sandy   loam, sandy   loam, fine   sandy loam	SC-SM, SM, SC     	A-2, A-4   	0-5   	0-5     	95-100     	95-100     	75-95     	12-50     	15-25     	NP-10     
		10-14	gravelly coarse   sandy loam,   gravelly sandy   loam, gravelly   fine sandy   loam	SM, SC	A-1, A-2       	0-5	0-25       	65-95       	50-75       	25-50       	10-30         	15-25         	NP-10         
		14-80	Stratified   gravelly   coarse sand to   loamy fine   sand	SP-SM, SP         	A-1, A-2       	0-5	0-25       	60-100       	35-100       	20-80       	0-55	0-20       	NP - 3       
Sahkahtay	7	0 - 4	Sandy loam	SM	A-2, A-4	0	0	85-100	80-100	55-85	25-40	15-25	NP-10
	 	4-8	Sand, loamy   sand	SP-SM, SM	A-2 	0	0 	85-100 	80-100 	50-85 	5-25	0-14	NP
		8-14	gravelly sandy loam, sandy clay loam,	sc, cL     	<b>A</b> - 6     	0	0-5     	80-100     	  75-98   	50-85     	40-60	30-40	10-20     
		14-80	Loamy sand,   sand, gravelly   coarse sand	SW, SW-SM, SM	A-1, A-2-4     	0	0-5	55-90     	50-85   	15-60     	2-20	0-14	NP   

Classification Fragments Percentage passing Map symbol Percent | Depth USDA texture sieve number --|Liquid| Plasand of >10 3-10 |limit |ticity Unified component name map unit AASHTO |inches|inches| 4 10 40 200 index In Pct Pct Pct 205: Marguette-----5 0 - 7 Loamy sand SP-SM, SC-SM, A-2 0 0-5 90-100|85-100|50-75 |10-35 0-20 NP-5 SM Very gravelly SM, GC, GM, A-1, A-2 0-15 | 45-85 | 20-55 | 10-45 | 5-35 0-30 NP-10 fine sandy SC loam, very gravelly loam, very gravelly sandy loam 16-80 |Stratified GP-GM, GP, A-1, A-2, A-3 0-10 |40-90 |15-90 | 0-65 | 0-30 | 0-14 NP 0 extremely SP-SM, SP gravelly coarse sand to fine sand Redby-----|Loamy fine sand SM A-2, A-3 0-20 NP-3 2 0-3 0 0 100 |95-100|85-95 | 5-25 |Fine sand, sand |SW-SM, SM 0-20 | NP-3 A-2, A-3 0 0 100 95-100 80-95 5-35 28-80 | Fine sand, sand | SP, SP-SM A-2, A-3 100 95-100 80-95 2-12 0-14 0 0 NP Pits, gravel----1 ------------------242B: 0-20 NP-5 Marquette-----85 0 - 7 Loamy sand SC-SM, SM, A-2 0 0-5 |90-100|85-100|50-75 |10-35 SP-SM SC, GC, SM, 7-16 | Very gravelly A-1, A-2 0-15 | 45-85 | 20-55 | 10-45 | 5-35 | 0-30 NP-10 fine sandy

|A-1, A-2, A-3|

0

0-10 |40-90 |15-90

0-65

0-30

0-14

loam, very
gravelly loam,
very gravelly
sandy loam

extremely

gravelly coarse sand to fine sand

GP-GM, GP,

SP-SM, SP

16-80 | Stratified

Table 23.--Engineering Index Properties--Continued

Table 23.--Engineering Index Properties--Continued

Map symbol	   Percent	Depth	USDA texture	Classif	icatio	n	Fragi	ments		rcentage sieve n	-	ng	  Liquid	   Plas-
and component name	of map unit			Unified	   aa	SHTO	>10  inches	3-10	   4	10	40	200	limit	ticity
		In					Pct	Pct	-	10	10	200	Pct	I
2.425														
242B: Karlstad	   14   	0-7 7-10	Loamy sand  Coarse sandy   loam, sandy	  SM, SP-SM  SC, SC-SM, SM 	  A-2,  A-2,		   0-5   0-5 			  95-100  95-100 			  15-25  15-25 	1
	     	10-14	loam, fine   sandy loam  gravelly coarse   sandy loam,   gravelly sandy	SM, SC	    A-1, 	A-2	   0-5 	     0-25 	    65-95 	    50-75 	    25-50 	    10-30 	    15-25   	    NP-10 
		14-80	loam, gravelly   fine sandy   loam  Stratified   gravelly   coarse sand to   loamy fine   sand	    SP-SM, SP 	      A-1,     	A-2	     0-5   	       0-25     	      60-100     	      35-100     	      20-80     	       0-55     	     0-20     	       NP-3   
Pits, gravel	1 1				 			 	 	 	 	 		 
280:				 						! 				
Pelan	85       	0-6 6-12	Sandy loam  Very gravelly   sandy loam,   very gravelly   sandy clay   loam	SM, SC-SM  SM, GM, GC,   SC 	A-2,  A-1, 		0 0			75-100  25-50   			0-20	
		12-24	Very gravelly   coarse sand,   very gravelly   fine sandy   loam	  GP-GM, SP-SM,   GP, SP   	  A-1,     	A-2	0	2-5     	  40-85     	  25-50     	   5-50     	1-10       	0-14     	   NP   
		24-60	Fine sandy   loam, sandy   loam, loam	CL, ML, SM,	A-4,	A-6	0-1	   1-5 	90-100   	85-95   	60-90   	40-65   	10-30	   1-15   
Strandquist	   10 	0 - 8	  Loam 	CL-ML, CL,	  A-4, 	A-6	0	   0-3 	  95-100 	  95-100 	  75-90 	45-70	20-40	   5-20 
		8-35	gravelly sand, gravelly coarse sand, very gravelly sand	SP-SM, SP,   GP, GP-GM 	A-1       		0     	2-5     	35-75     	  15-55     	5-40       	0-10	0-20	NP-3     
		35-80	Silty clay   loam, loam,   sandy loam	  CL-ML, SC-SM,   SC, CL 	  A-4,   	A-6	0-1	   1-5   	  95-100   	80-100   	  65-90   	35-80   	20-40	   5-20   

Map symbol   and	Percent of	   Depth 	USDA texture	Classif	ication  	Fragi	ments		rcentag	_	ng	  Liquid  limit	
component name	map unit	İ		Unified	AASHTO	inches	inches	4	10	40	200	ĺ	index
		In	Ī		1	Pct	Pct	Ī			Ī	Pct	
280:		 		 	 		 						l I
Garnes	3	0-9	Fine sandy loam	  SM	  A-4	0-1	0-3	95-100	  85-100	  55-75	35-50	20-30	NP-5
	J		Clay loam,   sandy clay	SC, CL	A-4, A-6	0-1		95-100				1	7-20
i		 	loam, loam	 	İ		 	i	 	 	İ		i
 		14-80	Sandy loam,   loam, fine   sandy loam	SC, ML, CL,	A-4, A-6 	0-1	   1-5 	95-100   	  75-95   	60-90   	35-65   	15-40 	1-15   
Marquette	1	   0-7	Loamy sand	  SP-SM, SC-SM,   SM	  A-2	0	   0-5 	  90-100	  85-100	  50-75 	10-35	0-20	  NP-5
		7-16     	Very gravelly   fine sandy   loam, very   gravelly loam,		  A-1, A-2   	   0   	   0-15   	  45-85     	  20-55     	  10-45     	   5-35     	0-30	  NP-10     
 		 	very gravelly sandy loam	 	 		 	 	 	 	 		
   		16-80     	Stratified   extremely   gravelly   coarse sand to   fine sand	GP-GM, GP, SP-SM, SP	A-1, A-2, A-3     	0   0	0-10	40-90     	15-90     	0-65	0-30	0-14     	NP     
Pits, gravel	1	 					 	 	 	 	 		
379:		 		 	 		 	 	 	 	ļ		
Percy, very   cobbly	90	   0-8 	  Loam	  CL-ML, CL,   SC-SM, SC	  A-4, A-6 	0-2	   1-5 	  90-100 	  85-100 	  70-95 	  35-70 	20-40	   5-15
İ		8-23   	Loam, fine sandy loam, sandy loam	CL-ML, CL 	  A-4 	0-1	   1-5   	  85-100   	  85-98   	  55-90   	35-70   	20-30	   5-10 
 		23-80	Loam, fine   sandy loam,   sandy loam	SC, CL, CL- ML, SC-SM	<b>A-4</b>   	0-1	1-5   	85-100   	85-98     	  55-90   	35-70   	15-30   	5-10   
Boash	3	0-9	Clay loam	CL	A-7	0						40-50	
 		9-29   	Clay, silty   clay loam,   silty clay	CL, CH   	A-7   	0   	0-2   	95-100   	90-100   	80-100   	70-95   	45-80   	25-50   
İ		29-80	Loam, sandy   loam, silt   loam	CL-ML, CL	A-4, A-6	0-1	1-5	95-100 	85-98	70-95	50-90	24-35	6-15

Table 23.--Engineering Index Properties--Continued

Table 23.--Engineering Index Properties--Continued

Map symbol	Percent	Depth	USDA texture	Classif	ication	i	ments		rcentag	_	ng	  Liquid	
and	of		!		!	>10	3-10	ļ				limit	ticity
component name	map unit			Unified	AASHTO		inches	4	10	40	200	<u> </u>	index
		In	 	İ		Pct	Pct					Pct	
379:			 	İ		Ì		l İ	İ	l İ	İ		
Strandquist	3	0 - 8	Loam	SC-SM, SC,	A-4, A-6	0	0-3	95-100 	95-100 	75-90	45-70	20-40	5-20
		8-35	gravelly sand,   gravelly   coarse sand,   very gravelly   sand	SP-SM, GP-GM,   SP, GP   	A-1     	0     	2-5     	35-75       	15-55       	5-40     	0-10     	0-20     	NP - 3     
		35-80	Silty clay   loam, loam,   sandy loam	SC-SM, SC,	A-4, A-6   	0-1	1-5   	95-100   	80-100   	65-90   	35-80	20-40	5-20   
Haug	2	0-10	Muck	  PT	  A-8	0	0	 	 	 			
-		10-16	Mucky sandy loam, fine sandy loam,	SM, CL, ML,	A-4, A-6   	0-1	0-3	95-100   	90-100   	70-85   	35-65   	15-40   	1-15   
		16-80	Loam, sandy   Loam, fine   sandy loam	SM, CL, ML,	  A-4, A-6   	0-1	   1-5   	  95-100     	  70-100   	  60-95     	  35-65     	  15-40   	   1-15   
Skagen, very			j	İ	İ	İ	İ	İ	İ	İ	İ	İ	İ
cobbly	2	0-10	Loam	CL, ML, CL-ML		0-2	1-5		85-100				NP-10
		10-28	Loam, fine   sandy loam,   sandy loam	CL-ML, SC-SM   	A - 4   	0	1-5   	85-100   	85-98   	55-90   	35-70	20-30	5-10   
		28-80	Loam, fine sandy loam, sandy loam	CL-ML, SC-SM	<b>A-4</b>   	0-1	1-5   	85-100   	85-98   	  55-90   	35-70   	20-30	5-10   
383:							 	İ	İ	İ			
Percy	90	0-10	Loam	SC, CL-ML, SC-SM, CL	A-4, A-6	0-1	0-3	90-100 	85-100	70-95	35-70	20-40	5-15 
		10-25	Loam, fine   sandy loam,   sandy loam	CL-ML, CL   	A-4 	0-1	1-5   	85-100   	85-98   	55-90   	35-70   	20-30	5-10   
		25-80	Loam, fine sandy loam, sandy loam	SC-SM, CL-ML, CL, SC	<b>A-4</b>   	0-1	1-5   	85-100   	85-98   	  55-90   	35-70   	15-30   	5-10   
Boash	3	0-9	Clay loam	CL	A-7	0	0-2	  95-100	90-100	80-100	70-95	40-50	20-25
		9-29	Clay, silty clay loam, silty clay	CH, CL	<b>A-7</b> 	0	0-2	95-100	90-100	80-100	70-95	45-80	25-50
		29-80	Loam, sandy   Loam, silt   loam	CL-ML, CL   	  A-4, A-6 	0-1	   1-5   	  95-100   	  85-98   	70-95   	50-90	24-35	   6-15   

Map symbol	   Percent	Depth	USDA texture	Classif	icati	on.	Fragi	ments		rcentag sieve n	_	-	  Liquid	   Plas
and	of			77-161-1		3 GTTM0	>10	3-10	4	1 10	1.0	1 000	limit	ticity
component name	map unit	In	1	Unified	A	ASHTO	Inches	inches   Pct	4	10	40	200	   Pct	index
									İ		İ	ì		
383: Strandquist	   3 	0-8	  Loam 	  SC-SM, SC,   CL, CL-ML	  A-4,	A-6	0	   0-3 	  95-100 	  95-100 	  75-90 	  45-70 	20-40	   5-20 
		8-35	gravelly sand, gravelly coarse sand, very gravelly sand	GP, SP, SP- SM, GP-GM	A-1   		0	2-5     	35-75       	15-55       	5-40     	0-10	0-20	NP - 3     
		35-80	Silty clay   loam, loam,   sandy loam	SC-SM, SC,	A-4,	A-6	0-1	1-5   	95-100     	80-100   	65-90   	35-80	20-40	5-20   
Haug	2	0-10	Muck	PT	A-8		0	0						
		10-16	Mucky sandy   loam, fine   sandy loam,   loam	SM, CL, ML,	A-4,	A-6	0-1	0-3	95-100	90-100	70-85     	35-65	15-40	1-15   
		16-80	Loam, sandy   loam, fine   sandy loam	SM, SC, CL, ML	A-4,	A-6	0-1	1-5   	95-100     	70-100   	60-95     	35-65	15-40	1-15   
Skagen	2	0-9 9-19	Loam  Loam, fine   sandy loam,   sandy loam	CL, CL-ML, ML			0-1	0-3   1-5 		85-100  85-98 		55-75  35-70	20-30	NP-10   5-10 
		19-80	Loam, fine sandy loam, sandy loam	CL-ML, SC-SM	A-4   		0-2	1-5   	85-100     	85-98     	55-90     	35-70	20-30	5-10   
384:	İ		İ	İ	İ		į	İ	İ	İ	İ	į	İ	İ
Percy, depressional	   85	0-8	  Mucky loam	CL-ML, CL	  A-4,	3 6	0-1	   0-1	05 100	   0E 100	75 05	  60-75	1 5 2 5	5-15
deplessional	83   	8-27	Loam, sandy   loam, fine   sandy loam	CL, CL-ML		A-4	0-1	1-5   		1		35-75		5-15   5-15 
		27-80	Loam, fine   sandy loam,   sandy loam	ML, SC, SM,   CL 	A-4   		0-1	1-5   	85-100   	85-98   	55-90   	35-70	15-30   	3-10   
Haug	7     	0-10 10-16	  Muck  Mucky sandy   loam, fine   sandy loam,   loam	PT  ML, OL, CL,  SM	A-8  A-4,	A-6	0 0-1	0 0 - 3	    95-100   	  90-100   	    70-85   	  35-65   	  15-40 	     1-15 
		16-80	1	CL, ML, SC,   SM 	A-4, 	A-6	0-1	   1-5   	95-100	70-100   	60-95	35-65	15-40	   1-15   

Table 23.--Engineering Index Properties--Continued

Table 23.--Engineering Index Properties--Continued

Map symbol	Percent	Depth	USDA texture	Classif	ication	Frag	ments		rcentage	e passinumber	ng	  Liquid	   Plas-
and	of	_		i	1	>10	3-10	i				limit	
component name	map unit		İ	Unified	AASHTO	inches	inches	4	10	40	200	İ	index
		In	ļ		1	Pct	Pct					Pct	
384:			 					 		 	 		 
Percy	5	0-10	Loam	SC-SM, CL, CL-ML, SC	A-4, A-6	0-1	0-3	90-100	85-100	70-95	35-70	20-40	5-15
		10-25	Loam, fine   sandy loam,   sandy loam	CL, CL-ML   	A-4 	0-1   	1-5   	85-100   	85-98   	55-90   	35-70   	20-30   	5-10   
		25-80	Loam, fine sandy loam, sandy loam	SC, SC-SM,	A-4   	0-1   	1-5   	  85-100   	85-98     	55-90     	35-70   	15-30   	5-10   
Boash	3	0-9	Clay loam	CL	  A-7	0	0-2	  95-100	90-100	80-100	  70-95	40-50	20-25
			Clay, silty clay loam, silty clay	CH, CL   	A-7 	0	0-2	  95-100   	90-100	80-100   	70-95 	45-80 	  25-50 
		29-80	Loam, sandy loam, silt loam	CL, CL-ML   	A-4, A-6	0-1	1-5   	  95-100   	  85-98   	70-95   	50-90   	24-35	6-15   
387:			ì								 		
Roliss,													
depressional	85	0 - 8	Loam	CL-ML, CL		0-1	1			80-100		20-40	5-20
		8-13	Loam, clay   loam, silty   clay loam	CL	A-6, A-7 	0-1   	1-5   	95-100   	80-100   	80-90   	60-80   	20-50	10-30   
		13-80	Loam, clay loam	CL, CL-ML	A-4, A-6, A-7	0-1	1-5	95-100	80-98	80-95	60-80	20-50	5-30
Haug	10	0-10	Muck	   PT	  A-8	0	0	 	 		 		 
-		10-16	Mucky sandy   loam, fine   sandy loam,   loam	SM, ML, OL, CL	A-4, A-6	0-1   	0-3	  95-100     	90-100     	70-85     	35-65     	15-40     	1-15     
		16-80	Loam, sandy  loam, fine  sandy loam	SM, SC, CL,   ML 	A-4, A-6	0-1	   1-5   	  95-100   	  70-100   	60-95   	35-65   	15-40   	   1-15   
Roliss	5	0-14	Loam	CL, CL-ML	A-4, A-6	0-1	0-3	95-100	80-100	80-100	60-90	20-40	5-20
		14-20	Loam, clay loam, silty clay loam	CL   	A-6, A-7	0-1	1-5   	95-100   	80-100   	80-90   	60-80   	20-50	  10-30   
		20-80	Loam, clay loam	CL, CL-ML	A-4, A-6, A-7	0-1	1-5	95-100 	80-100	80-95 	60-80	20-50	5-30

Table 23.--Engineering Index Properties--Continued

Map symbol	Percent	   Depth	USDA texture	Classif	ication	Frag	ments		rcentago sieve n	-	_	Liquid	   Plas-
and	of					>10	3-10	ì				limit	1
component name	map unit			Unified	AASHTO	inches	inches	4	10	40	200		index
•		In	!		!	Pct	Pct	<u> </u>				Pct	
404:	 			 	 	 	 		 	 			
Chilgren	85 	0-5	Fine sandy loam	SC-SM, ML,	A-2, A-4	0-1	0-3	90-100	85-100	60-85	25-55	15-35	NP-10
	 	5-9 	Loamy sand, loamy fine sand, fine sandy loam	ML, SM, CL-   ML, SC-SM   	A-2, A-4   	0-1	0-3	75-100   	70-100     	50-85   	15-55     	15-35   	NP-10   
	 	9-16 	Clay loam,   loam, sandy   clay loam	CL, SC, SM,   ML	A-4, A-6, A-7 	0-1   	1-5   	75-100   	70-100   	60-95   	35-85	25-50	7-20
		16-80 	Loam, sandy   loam, fine   sandy loam	SC, CL, SM,	A-4   	0-1   	2-5   	75-100   	70-100   	50-90     	35-70   	20-30	3-10
Garnes	5	0-9	Fine sandy loam	  SM	A-4	0-1	0-3	95-100	85-100	  55-75	35-50	20-30	NP-5
	 	9-14 	Clay loam,   sandy clay   loam, loam	sc, cL 	A-4, A-6	0-1   	0-5 	95-100	80-100   	70-100   	45-80	20-40	7-20
	   	14-80   	Sandy loam,   loam, fine   sandy loam	SM, CL, ML,   SC 	A-4, A-6   	0-1   	1-5   	95-100   	75-95   	60-90   	35-65   	15-40   	1-15   
Grygla	   5	   0-6	Loamy fine sand	SC-SM, SM	  A-2	   0	   0	100	100	  85-95	  15-35	  15-25	  NP-7
		6-26	Sand, fine   sand, loamy   fine sand	SP-SM, SC-SM,	A-2, A-3 	0	0-1	95-100	90-100	70-95   	5-35	15-20	NP-5   
	   	26-80   	Loam, fine   sandy loam,   silt loam	CL, CL-ML     	A-4, A-6   	0-1   	0-5   	95-100     	80-100     	70-85     	50-70     	20-40	5-20   
Haug	5	0-10	Muck	PT	A-8	0	0			i			
	     	10-16   	Mucky sandy   loam, fine   sandy loam,   loam	ML, OL, CL,   SM   	A-4, A-6   	0-1   	0-3   	95-100     	90-100     	70-85     	35-65     	15-40   	1-15     
		16-80 	Loam, sandy   loam, fine   sandy loam	SM, CL, ML,	A-4, A-6 	0-1	1-5   	95-100   	70-100   	60-95   	35-65   	15-40 	1-15   

Table 23.--Engineering Index Properties--Continued

Map symbol	Percent	Depth	USDA texture	Classif	ication	Frag	ments		rcentage	_	ng	  Liquid	   Plas-
and	of	_	į		1	>10	3-10	i				limit	ticity
component name	map unit		į	Unified	AASHTO	inches	inches	4	10	40	200	i	index
		In	İ	İ	İ	Pct	Pct		<u> </u>			Pct	İ
412:			 	 	 		 	 		 			 
Mavie	85	0-12	Fine sandy loam	SM	A-2, A-4	į o	0-3	95-100	85-100	55-85	30-50	15-30	NP-7
		12-18	Loam, fine sandy loam, sandy loam	SC-SM, CL-ML, CL, SC	A-4, A-6 	0	2-5	95-100   	85-100   	70-95   	40-75   	20-35	5-15   
		18-39	Very gravelly   coarse sand,   very gravelly   sand, very   gravelly loamy   sand	SP-SM, GP-GM, SP, GP	<b>A-1</b>       	0	2-5       	30-65	15-55         	10-30       	1-10         	         	NP         
		39-80	Loam, silt   loam, clay   loam	ML, CL, CL-ML     	A-4, A-6   	0-1	1-5     	95-100     	75-90     	70-85     	50-75     	20-40	2-15     
Foxhome	5	0-10	Sandy loam	SM	A-4	0	0-2	95-100	90-100	75-90	35-50	15-30	NP-5
			Fine sand,   loamy fine   sand, sand		A-2, A-3   	0-1   	0-3   	95-100   	90-100   	70-85   	5-35   	0-25   	   
		15-23	gravelly sand,   very gravelly   coarse sand,   very gravelly   loamy sand	GP-GM, SP-SM,   SP, GP   	A-1     	0	2-5     	30-65       	15-45       	5-40     	0-10     	0-20       	NP - 1       
		23-80	Loam, clay   loam, silt   loam	ML, CL-ML, CL	A-4, A-6   	0-1	1-5   	90-100     	85-100   	75-90     	50-80	20-40	1-15   
Northwood	5	0-11	Muck	PT	A-8	0	0						
		11-16	Fine sandy   loam, loamy   fine sand,   loamy sand	SM, SC-SM	A-2, A-4   	0	0-3	95-100     	90-100	51-85   	15-50   	0-35	NP-10   
		16-25	-	  SM, SP-SM     	  A-3, A-2   	0	   0-3   	  95-100     	  80-100     	70-95     	   5-35     	0-14     	NP     
		25-80	Loam, clay   loam, fine   sandy loam	ML, CL, CL-ML   	A-4, A-6   	0-1	1-5   	95-100     	90-100	75-100   	50-80	20-40	3-20

Map symbol	Percent	   Depth	USDA texture	Classif	ication	_i	ments		rcentage sieve n	_	-	  Liquid	
and component name	of map unit		 	Unified	AASHTO	>10	3-10		10	40	200	limit	ticity  index
- component name	map dire	In	<u> </u>		AADIIIO	Pct	Pct	-	10	40	200	Pct	Index
			į	į	į	į	į	į	į	į	į.	į	į
412:													
Percy, very cobbly	   5	   0-8	Loam	SC, CL-ML,	  A-4, A-6	0-2	   1-5	  90-100	   0E 100	   70 0E		20 40	   5-15
CODDIY	] 	U-8 	HOalii	CL, SC-SM	A-4, A-0	0-2	1-3			70-33 	33-70	20-40	3-13
		8-23	Loam, fine	CL, CL-ML	A-4	0-1	1-5	85-100	85-98	55-90	35-70	20-30	5-10
	j		sandy loam,	İ	į	j	İ	į	į	į	İ	j	į
			sandy loam										
		23-80	Loam, fine	SC, SC-SM,	A-4	0-1	1-5	85-100	85-98	55-90	35-70	15-30	5-10
			sandy loam,	CL, CL-ML									
			sandy loam	l I				 	 	 			
432:	 		[ [	 			 	 	 	 	İ		 
Strandquist	85	0-8	Loam	SC-SM, CL-ML,	A-4, A-6	0	0-3	95-100	95-100	75-90	45-70	20-40	5-20
			ļ	CL, SC							]		
		8-35	gravelly sand,	GP, GP-GM,	A-1	0	2-5	35-75	15-55	5-40	0-10	0-20	NP-3
			gravelly coarse sand,	SP-SM, SP									
	 		very gravelly	 		l I	l I	 	l I	l I			 
			sand	İ		i			 		1		
	İ	35-80	Silty clay	CL-ML, CL,	A-4, A-6	0-1	1-5	95-100	80-100	65-90	35-80	20-40	5-20
	j		loam, loam,	SC, SC-SM	İ	j	j	į	İ	į	į	j	į
			sandy loam	ļ.	!			ļ		ļ.	!		
Percy, very			 	 	ļ Ī		 	 	 	 			 
cobbly	5	0-8	Loam	CL, SC, CL-	A-4, A-6	0-2	1-5	90-100	85-100	70-95	35-70	20-40	5-15
-	j i		İ	ML, SC-SM	į	j	j	į	į	į	į	j	į
		8-23	Loam, fine	CL-ML, CL	A-4	0-1	1-5	85-100	85-98	55-90	35-70	20-30	5-10
			sandy loam,	!				[					
			sandy loam									115.20	
	l I	23-80	Loam, fine sandy loam,	CL, SC-SM,	A-4	0-1	1-5	85-100	85-98 	55-90	35-70	15-30	5-10
			sandy loam	CH-MH, SC		l I	l I	l I	 	l I			 
							İ	İ		İ	ì		
Haug	4	0-10	Muck	PT	A-8	0	0	j	i	j	j	j	i
		10-16	Mucky sandy	SM, OL, CL,	A-4, A-6	0-1	0-3	95-100	90-100	70-85	35-65	15-40	1-15
			loam, fine	ML				[					
			sandy loam,										
	 	   16-90	loam Loam, sandy	CL, ML, SC,	  A-4, A-6	0-1	   1-5	  95-100	   70 - 100	   60 - 9 F	  35-65	15-40	   1-15
	 	10-00	loam, sandy	SM	A-4, A-0	0-1	1-5	 	 	00-35 	33-05	1 2 - 40	1-13
			sandy loam					İ		ĺ	ì		
			i	į	İ	i	į	į	į	į	i	İ	i

Table 23.--Engineering Index Properties--Continued

Table 23.--Engineering Index Properties--Continued

Map symbol	Percent	Depth	USDA texture	Classif:	ication	Frag	ments		_	e passi: umber	ng	Liquid	   Plas-
and	of					>10	3-10					limit	ticity
component name	map unit			Unified	AASHTO	inches	inches	4	10	40	200		index
		In	ļ	!	!	Pct	Pct	ļ				Pct	!
432:			İ	 	 		 	 			 		
Boash	3	0-9	Clay loam	CL	  A-7	0	0-2	   95_100	   90_100	   80_100	  70_95	40-50	20-25
Doubli			Clay, silty	CL, CH	A-7	0						45-80	
			clay loam,		<i>'</i>   			   					
		29-80	Loam, sandy   loam, silt   loam	CL-ML, CL 	A-4, A-6	0-1	1-5   	95-100   	85-98   	70-95   	50-90 	24-35	6-15   
Foxhome	   3	0-10	  Sandy loam	  SM	  A-4	   0	0-2	  95-100	  90-100	  75-90	  35-50	  15-30	  NP-5
r Oxnome	3		Fine sand,	1	A-2, A-3	0-1			90-100		5-35	0-25	
			loamy fine sand, sand					   	   				
		15-23	gravelly sand, very gravelly coarse sand, very gravelly loamy sand	SP-SM, SP,   GP-GM, GP 	<b>A-1</b>     	0     	2-5     	  30-65     	15-45     	5-40     	0-10     	0-20	NP-1       
		23-80	Loam, clay   loam, silt   loam	CL-ML, ML, CL   	A-4, A-6   	0-1	   1-5   	  90-100   	85-100   	  75-90   	50-80	20-40	   1-15   
433:			1		 								
Syrene,	į		İ	İ	j	į	į	į	į	İ	į	į	į
depressional	85	0-12	Mucky sandy	SM, SC, SC-SM	A-4 	0	0-3	95-100	85-100 	55-70 	35-50	15-35	NP-10
		12-18	Loam, sandy loam, sandy clay loam	ML, SM   	A-4 	0   	0-3	95-100   	85-100   	55-75   	35-65	20-40	1-10   
		18-80	Stratified   gravelly   coarse sand to   loamy fine   sand	SP, SP-SM       	A-1, A-2, A-3       	0       	2-5       	75-95         	55-85       	30-60       	0-10       	       	NP       
Deerwood	5	0-14	Muck	PT	A-8	0	0						
		14-16	Fine sand,   loamy sand,   fine sandy   loam	SP-SM, SM   	A-2, A-4   	0     	0-5     	95-100     	90-100     	50-75     	12-50     	0-20	NP - 4     
		16-80	Fine sand,   sand, gravelly   sand	  SP, SP-SM, SM   	A-1, A-2, A-3   	0	0-5	75-100   	55-100   	35-70   	1-25	0-14	   NP 

Map symbol	   Percent	Depth	USDA texture	Class:	fication.	on	Frag	ments		rcentag sieve n	_	_	Liquid	   Plas
and	of	202011			1		>10	3-10	i '				limit	
component name	map unit			Unified	A	ASHTO		inches	4	10	40	200		index
compositerio riame		In					Pct	Pct		10	10	200	Pct	I
433:	 		 	 			1			 	 			
Rosewood	   5	0-11	  Fine sandy loam	I ISC SC-SM S	M Δ-2	Δ _ 4	0	0	100	97-100	  65-90	30-50	15-30	  NP-10
Rogewood				SM, SC, SC-			0	0   0 	100   100 			25-45		NP-10     
	i i	19-65	Fine sand, sand	SM, SP-SM	A-1,	A-2, A-	3 0	0	85-100	75-95	45-75	5-25	5-15	NP
		65-80	Fine sand,   sand, coarse   sand	SM, SP-SM	A-1,	A-2, A-	3   0   	0   	85-100   	75-95   	40-80	5-35	5-15	NP 
Syrene	l 5	0-11	Sandy loam	SC, SC-SM,	!M   Δ _ 4		0	0-3	95-100	  85-100	  55-70	35-50	15-35	  NP-10
Dy Tene				SM, ML	A-4 		0	0-3				35-65		1-10
		19-80		  SP, SP-SM     	A-1,     	A-2, A-	3 0     	2-5       	  75-95       	  55-80     	30-60       	0-10	5-20	NP - 5       
435:							ì							
Syrene	85       			SM, SC, SC-1  SM, ML   	BM   A-4   A-4 		0 0		95-100  95-100   					NP-10   1-10   
		19-80	Stratified   gravelly   coarse sand to   loamy fine   sand	SP-SM, SP         	A-1,     	A-2, A-	3   0     	2-5     	75-95       	55-80       	30-60     	0-10	5-20     	NP - 5       
Rosewood	5	0-11	  Fine sandy loam	SC, SC-SM,	SM   A-2,	A-4	0	0	100	  97-100	  65-90	30-50	15-30	  NP-10
	 	11-19	Fine sandy   loam, loamy   fine sand,   sandy loam	SM, SC, SC-8     	SM   A-2,   	A-4	0   	0     	100     	95-100     	60-85     	25-45	15-30   	NP-10     
	ı İ	19-65	Fine sand, sand	SM, SP-SM	A-1,	A-2, A-	3 0	0	85-100	75-95	45-75	5-25	5-15	NP
	       	65-80	Fine sand,   sand, coarse   sand	SM, SP-SM   	A-1,   	A-2, A-	3   0   	0   	85-100   	75-95   	40-80   	5-35   	5-15   	NP   

Table 23.--Engineering Index Properties--Continued

Table 23.--Engineering Index Properties--Continued

Map symbol	Percent	Depth	USDA texture	Classif	ication	Frag	ments		rcentag	_	_	  Liquid	   Plas-
and	of		İ			>10	3-10	İ				limit	ticity
component name	map unit			Unified	AASHTO	inches	inches	4	10	40	200		index
		In		I		Pct	Pct	1				Pct	1
			ļ.						[		]	[	[
435:						!	ļ	!		!	!	!	!
Syrene,	_												
depressional	5	0-12	Mucky sandy   loam	SM, SC, SC-SM	A - 4	0	0-3	95-100	85-100	55-70	35-50	15-35	NP-10
		12-18	!	  ML, SM	   A-4	   0	0-3	  95-100	  85-100	  55-75	  35-65	20-40	1-10
		12 10	loam, sandy		<del></del> 	"	0 3			33 /3		20 10	1 10
	i		clay loam			i	i	i	i	İ	i	i	i
	į	18-80	Stratified	SP, SP-SM	A-1, A-2, A-3	0	2-5	75-95	55-85	30-60	0-10	j	NP
			gravelly										
			coarse sand to			[		[			[		[
			loamy fine										
			sand	l I	l I					 			
Karlsruhe	3	0-8	  Sandy loam	  SC, SC-SM, SM	  A-4. A-2	l I 0	1 0	  95-100	  85-100	  60-90	30-65	0-35	  NP-15
1142 252 4110				SM, SC, SC-SM	•		0		85-100				NP-15
	i		loamy sand	İ	İ	İ	İ	İ	i	İ	i	i	İ
j	İ	16-80	Coarse sand,	GP, GP-GM,	A-1, A-2, A-3	0	0-5	45-90	30-80	20-70	0-15	0-20	NP
			gravelly	SM, SP, SP-		[							
			coarse sand,	SM		!		!		!	!		!
			gravelly sand										
Deerwood	2	0-14	Muck	   PT	  A-8	   0	0	 	 	 			 
2002000	_		1	1	A-2, A-4	0	0-5	95-100	90-100	50-75	12-50	0-20	NP-4
	i		loamy sand,	İ	İ	İ	İ	İ	i	İ	i	i	İ
j	İ		fine sandy	ĺ	İ	ĺ	İ	ĺ	İ	ĺ	İ	İ	ĺ
			loam										
		16-80		SM, SP, SP-SM	A-1, A-2, A-3	0	0-5	75-100	55-100	35-70	1-25	0-14	NP
			sand, gravelly										
			sand	l I	 	l I	1	l I	 	l I		1	l I
439:					 	l I	İ	 	 	 	İ		l I
Strathcona	85	0-10	Fine sandy loam	SM, SC-SM	A-2, A-4	0	0	100	95-100	65-85	30-50	20-30	NP-10
j	İ	10-17	Fine sandy	SM, SC-SM	A-2, A-4	0	0	100	95-100	65-85	15-50	20-30	NP-10
			loam, sandy			[		[					
			loam, loamy										
			fine sand										!
		17-28	1	SM, SP-SM	A-2	0	0-1	95-100	85-100	60-80	10-30	0-14	NP
			sand, loamy	 	 	I I	1	I I	 	I I	I	I	I I
		28-80	Fine sand	CL-ML, CL	  A-4, A-6	0-1	1-5	  95-100	  85-98	   70 - 90	  50-70	25-40	   5-20
			loam, loam,		<b>-,                             </b>	, • <del>•</del>	- 0						2 23
	i		clay loam	İ	İ	į	İ	į	į	į	į	İ	i
	ı i					[		[					

Table 23.--Engineering Index Properties--Continued

Map symbol	   Percent	   Depth	USDA texture	Classif	ication	Frag	ments		rcentag sieve n	_	_	  Liquid	   Plas
and component name	of     map unit	 		Unified	AASHTO	>10	3-10	4	10	40	200	limit	ticity
- Composite rame		In	!	0111100		Pct	Pct	!		<u> </u>		Pct	
439:	 			 			 	 	 	 			 
Northwood	5	0-11	Muck	PT	A-8	0	0	i			i	i	
	 	11-16   	Fine sandy   loam, loamy   fine sand,   loamy sand	SM, SC-SM     	A-2, A-4   	0	0-3	95-100     	90-100	51-85     	15-50     	0-35	NP-10   
	 	16-25   	Coarse sand,   fine sand,   loamy fine   sand	SM, SP-SM   	A-3, A-2   	0	0-3   	95-100     	80-100     	70-95     	5-35   	0-14	NP   
		25-80	Loam, clay   loam, fine   sandy loam	  ML, CL, CL-ML   	  A-4, A-6   	0-1	   1-5   	  95-100   	  90-100   	  75-100   	50-80	20-40	3-20
Percy	   5   	0-10	Loam	SC-SM, SC,	  A-4, A-6 	0-1	0-3	  90-100 	  85-100 	  70-95 	35-70	20-40	   5-15 
	 	10-25	Loam, fine sandy loam, sandy loam	CL, CL-ML   	A-4 	0-1	1-5   	85-100   	85-98   	   55-90   	35-70   	20-30	5-10   
		25-80	Loam, fine   sandy loam,   sandy loam	SC, CL, SC- SM, CL-ML	<b>A-4</b>   	0-1	1-5   	85-100   	85-98     	  55-90   	35-70   	15-30	5-10   
Grimstad	   3	   0-10	Fine sandy loam	SC-SM, SM	A-2, A-4	0	0	100	100	  80-100	15-50	15-30	NP-7
			Loamy sand,   loamy fine   sand, fine   sand		A-2, A-3	0	0   		95-100     			15-25	1
		30-80	Sandy loam,   fine sandy   loam, loam	CL, CL-ML, SC, SC-SM	  A-4, A-6   	0-1	   1-3   	  95-100   	  85-100   	  70-90   	  40-85   	15-40	5-20   
Strandquist	2     2	0-8	Loam	SC-SM, SC,	  A-4, A-6 	0	   0-3 	  95-100 	  95-100 	  75-90 	  45-70 	20-40	5-20
			gravelly coarse sand, very gravelly sand	GP-GM, GP, SP-SM, SP	A-1     	0       	     	     	15-55       	     	     	0-20	     
		35-80   	Silty clay   loam, loam,   sandy loam	SC-SM, SC, CL, CL-ML	A-4, A-6   	0-1	1-5   	95-100   	80-100   	65-90   	35-80   	20-40	5-20   

Table 23.--Engineering Index Properties--Continued

Map symbol	Percent	Depth	USDA texture	Classif	ication	Frag	ments		rcentage sieve n	_	-	  Liquid	   Plas-
and	of		İ			>10	3-10	İ				limit	ticity
component name	map unit			Unified	AASHTO	inches	inches	4	10	40	200		index
		In	]			Pct	Pct					Pct	
481:				 	 		 	 	 	 			 
Kratka	85	0 - 8	Fine sandy loam	SC-SM, SM	A-4	0	0	95-100	90-100	50-80	36-50	15-25	2-6
		8-22	Loamy sand, sand, loamy fine sand	SW-SM, SP-SM	A-2, A-3   	0	0   	95-100   	90-100   	50-80   	5-35   	0-20	NP-3
		22-80	Loam, clay loam	CL, CL-ML,	A-4, A-6	0-1	1-5	95-100	90-100	75-90	50-75	25-40	5-20
Northwood	5	0-11	Muck	  PT	  A-8	0	0	 	 	 			 
		11-16	Fine sandy   loam, loamy   fine sand,   loamy sand	SM, SC-SM     	A-2, A-4   	0	0-3	95-100	90-100	51-85     	15-50     	0-35	NP-10     
		16-25	Coarse sand,   fine sand,   loamy fine   sand	SM, SP-SM     	A-3, A-2     	0	0-3	95-100	80-100	70-95   	5-35	0-14	NP   
		25-80	Loam, clay   loam, fine   sandy loam	ML, CL, CL-ML	A-4, A-6   	0-1	1-5   	95-100   	90-100	  75-100   	50-80	20-40	3-20
Percy	5	0-10	Loam	SC, CL-ML,	  A-4, A-6 	0-1	0-3	90-100	  85-100 	  70-95 	35-70	20-40	5-15
		10-25	Loam, fine sandy loam, sandy loam	CL, CL-ML	<b>A-4</b>   	0-1	1-5   	85-100   	  85-98   	  55-90   	35-70   	20-30	5-10   
		25-80	Loam, fine   sandy loam,   sandy loam	CL, SC, CL-   ML, SC-SM 	<b>A-4</b>   	0-1   	1-5     	85-100     	85-98     	55-90     	35-70   	15-30   	5-10     
Enstrom	3	0 - 6	Loamy fine sand	SP-SM, SM	A-2	0	0	100	95-100	80-95	10-25		NP
		6-29	Fine sand,   sand, loamy   sand	SM, SP-SM   	A-2, A-3   	0   	0-3   	95-100   	80-100   	50-80   	5-30   	0-20	NP - 3   
		29-80	Fine sandy   loam, loam,   silty clay   loam	SC, SC-SM,	A-6, A-4     	0-1	0-3	90-100	80-95     	65-90     	35-80	20-40   	5-15     

Map symbol	   Percent	Depth	USDA texture	Classif	ication	Fragi	ments		rcentago sieve n	_	-	  Liquid	   Plas-
and	of		İ	!	[	>10	3-10	ļ				limit	
component name	map unit		<u> </u>	Unified	AASHTO		inches	4	10	40	200	<u> </u>	index
		In		 		Pct	Pct	 	 	 		Pct	
481:							İ	İ					İ
Strandquist	2	0 - 8	Loam	SC-SM, CL-ML,	A-4, A-6	0	0-3	95-100	95-100 	75-90	45-70	20-40	5-20
		8-35	gravelly sand,   gravelly   coarse sand,   very gravelly   sand	SP, SP-SM,   GP-GM, GP   	A-1     	0       	2-5     	35-75     	15-55       	5-40     	0-10     	0-20	NP-3     
		35-80	Silty clay   loam, loam,   sandy loam	SC-SM, SC,	A-4, A-6   	0-1	   1-5   	95-100   	80-100   	65-90   	35-80	20-40	5-20   
482:													 
Grygla	85   	0-6 6-26	Loamy fine sand  Sand, fine   sand, loamy   fine sand	SC-SM, SM  SC-SM, SM,   SP-SM	A-2  A-2, A-3 	0   0 	0   0-1 	100  95-100 				15-25  15-20 	NP-7   NP-5 
		26-80	1	  CL, CL-ML 	A-4, A-6 	0-1	   0-5   	  95-100   	  80-100   	  70-85   	50-70	20-40	5-20   
Chilgren	5   5	0-5	  Fine sandy loam 	  SC-SM, SM,   CL-ML, ML	  A-2, A-4 	   0-1 	   0-3 	  90-100 	  85-100 	  60-85 	25-55	  15-35 	  NP-10 
		5-9	Loamy sand, loamy fine sand, fine sandy loam	SC-SM, CL-ML,   ML, SM   	A-2, A-4   	0-1	0-3	75-100     	70-100   	50-85     	15-55	15-35	NP-10   
		9-16	Clay loam,   loam, sandy   clay loam	ML, CL, SM,   SC 	A-4, A-6, A-7   	0-1 	1-5   	75-100   	70-100   	60-95   	35-85	25-50	7-20   
		16-80	Loam, sandy loam, fine sandy loam	SM, SC, ML,   CL 	A-4   	0-1   	2-5     	75-100   	70-100   	  50-90   	35-70	20-30	3-10   
Grygla, depressional	5	0-5	  Mucky loamy   fine sand	SC-SM, SM	  A-2	0	   0	   100	     100	    85-95	15-35	0-25	  NP-10
		5-36	Fine sand  Sand, fine   sand, loamy   fine sand	  SP-SM, SC-SM,   SM	A-2, A-3	   0 	   0-1 	  95-100 	  90-100 	  70-95 	   5-35 	0-20	  NP-5 
		36-80	Time sand  Loam, fine   sandy loam,   silt loam	  CL, CL-ML   	  A-4, A-6   	   0-1 	   0-5   	  95-100   	  80-100   	  70-85   	50-70	20-40	   5-20 

Table 23.--Engineering Index Properties--Continued

Table 23.--Engineering Index Properties--Continued

Map symbol	Percent	Depth	USDA texture	Classif	ication	_i	ments		rcentag	e passi: umber	ng	  Liquid	
and	of					>10	3-10		1	1		limit	
component name	map unit		<u> </u>	Unified	AASHTO		inches	4	10	40	200	<u> </u>	index
		In	1			Pct	Pct					Pct	
482:	 		l I	 	 			 	 		 	1	 
Enstrom	3	0-6	Loamy fine sand	SM, SP-SM	A-2	0	0	100	95-100	80-95	10-25	i	NP
	j j	6-29	Fine sand,	SM, SP-SM	A-2, A-3	0	0-3	95-100	80-100	50-80	5-30	0-20	NP-3
	 		sand, loamy sand	 	 		 	 		 	 		 
	į į	29-80	Fine sandy	CL, CL-ML,	A-4, A-6	0-1	0-3	90-100	80-95	65-90	35-80	20-40	5-15
	! !		loam, loam,	SC, SC-SM			!	!		!	ļ	ļ	
	 		silty clay	 	 		 	 	 	 	 	 	 
	i i							İ			İ	İ	
Northwood	2	0-11	1	1	A-8	0	0						
		11-16	Fine sandy	SM, SC-SM	A-2, A-4	0	0-3	95-100	90-100	51-85	15-50	0-35	NP-10
	 		loam, loamy fine sand,	l I	 		 	l I	 	 	l I		 
			loamy sand	 	 		i	 	 	i	l I	İ	i i
	į i	16-25		SM, SP-SM	A-3, A-2	0	0-3	95-100	80-100	70-95	5-35	0-14	NP
			fine sand,										
			loamy fine										
	 	25-80	sand  Loam, clay	  ML, CL, CL-ML	   <b>\ \ \ \ \ \ \</b>	0-1	   1-5	  95-100	   90-100	  75-100	  50-80	20-40	3-20
	 	25-00	loam, fine		N-4, N-0	0-1	1-3					20-40	3-20
	į į		sandy loam	į	į	j	į	į	į	į	į	į	į
532:	 			 	 		 	 	 	 	 		
Sago	90	0-14	Muck	PT	A-8	0	0						
		14-80	Stratified fine		A-2, A-4	0	0	98-100	95-100	70-95	15-85	15-30	2-9
			sand to silt loam	SC	l I			 	 		 		
	 			 	 			i I			İ		
Cathro	5	0-8	Muck	PT	A-8	0	0	j	j	j	j	j	j
			Muck	1	A-8	0	0						
		40-80			A-4, A-6	0-1	0-5	85-100	75-100	60-100	35-90	20-40	5-20
	 		loam, clay	SC, SC-SM	 		 	 	 	 	 		 
	j j		İ	İ		i	İ	İ	İ	İ	İ	İ	İ
Zippel	5	0-10	Very fine sandy	ML, CL-ML	A-4	0	0	100	95-100	85-100	50-75	15-25	NP-5
		10.16	loam			0	   0	100				115 05	  ND E
	 	10-16	Very fine sand,   very fine	CL-ML, ML	A-4 	0	0	100	  95-100	  85-100	50-95	15-25	NP-5
	i i		sandy loam,	İ	! 								
	j i		loamy very	į	İ	j	į	į	į	į	į	į	į
	ļ İ		fine sand	[			[	[	[	[	[		
		16-80	Stratified silt	CL-ML, ML	A-4	0	0	100	95-100	85-100	50-95	15-25	NP-5
	 		loam to very	 	 			 	 		[ [		
	ı   		Time samu	 	! 			İ	! 		i İ		
			1										

Table 23.--Engineering Index Properties--Continued

Map symbol	   Percent	Depth	USDA texture	Classif	ication	Frag	ments		rcentage sieve n	_	ng	  Liquid	   Plas
and	of	_			I	>10	3-10	i				limit	
component name	map unit			Unified	AASHTO		inches	4	10	40	200		index
		In	!		!	Pct	Pct					Pct	
534:			 		 		 	 		 	 	 	 
Mooselake	90	0-16	Mucky peat	PT	A-8	0	1-10	i					
	į	16-80	Mucky peat	PT	A-8	0	0-10	ļ		ļ			
Bullwinkle	0 to 10	0-16	Muck	  PT	  A-8	0	  10-25	 	 	 	 	 	 
		16-48	Muck	PT	A-8	0	10-25						
		48-80	Silt loam	CL-ML, CL	A-6, A-4	0-1	0-5	100	95-100	85-100	65-90	25-35	5-15
Dora	0 to 10	0 - 8	Muck	  PT	  A-8	0	0-5	 		 	 	 	
		8-26	Muck	PT	A-8	0	0-5						
		26-80	Silty clay   loam, silty   clay, clay	CL, CH   	A-7   	0	0   	100   	100   	90-100   	90-100   	45-80   	35-50   
Tawas	0 to 10	0-10	Muck	  PT	  A-8	0	   1-10	 	 	 	 	 	
		10-27	Muck, mucky peat	PT	A-8 	0	0-10 	 	 	 	 	 	 
	 	27-80	Fine sand,   sand, loamy   sand	SP-SM, SP, SM	A-2-4, A-3 	0	0   	80-100   	60-100   	50-75   	0-20	0-14   	NP 
540:	 		 		 		 	 	 	 	 	 	 
Seelyeville	90	0-12	Muck	PT	A-8	0	0						
		12-80	Muck, mucky   peat	PT	A-8 	0	0	 	 	 			   
Cathro	0 to 10	0 - 8	Muck	1	  A-8	0	0	 		 	 	 	
		8-40	Muck	1	A-8	0	0						
		40-80	Sandy loam,   loam, clay   loam	CL, CL-ML,	A-4, A-6   	0-1	0-5   	85-100   	75-100   	60-100   	35-90   	20-40   	5-20   
Dora	0 to 10	0-5	  Muck	  PT	  A-8	0	0	 		 	 	 	
		5-31	Muck	1	A-8	0	0						
		31-80	Silty clay   loam, silty   clay, clay	CH, CL   	A-7   	0	0   	100   	100   	90-100   	90-100   	45-80   	35-50   
Markey	0 to 10	0-42	Muck	  PT	  A-8	0	0	 		 	 	 	
	 	42-80	Fine sand,   loamy sand,   coarse sand	SM, SP, SP-SM	A-2, A-3 	0   	0   	100   	75-100   	60-75   	0-20   	   	NP   

Table 23.--Engineering Index Properties--Continued

Map symbol	   Percent	   Depth	USDA texture	Classif	ication	Frag	ments		rcentage sieve n	_	ng	  Liquid	
and	of					>10	3-10					limit	ticity
component name	map unit	<u> </u>	<u> </u>	Unified	AASHTO	<u> </u>	inches	4	10	40	200		index
		In				Pct	Pct					Pct	
541:	l I	 		l I	 	l I	l I	l I	 	 	l I		l I
Rifle	l   90	   0-8	  Mucky peat	  PT	  A-8	l 0	0-10	 		 	 		 
KILLO	30 	8-80	Mucky peat	PT	A-8	0	0-5			 			
						i		i	<u> </u>	İ	i	i	i
Tacoosh	10	0-17	Mucky peat	PT	A-8	0	1-10	j			j	j	j
		17-33	Mucky peat	PT	A-8	0-5	1-10						
		33-80	Silt loam,	CL-ML, CL	A-4, A-6	0	0	100	95-100	90-100	70-95	25-40	5-20
			silty clay										
			loam			!	ļ	!			!	!	!
F.4.2													
543: Markey	   90	   0-42	Muck	  PT	  A-8	   0	   0	 	 	 	 		 
Markey	50 		Fine sand,	SP, SM, SP-SM	1	0	0	100	75-100	1	0-20		NP
	i I		loamy sand,					====			0 20	i	
		İ	coarse sand	İ		İ	İ	İ	İ	İ	İ	i	İ
		j		į	j	į	j	į	į	į	į	į	İ
Cormant	5	0-6	Loamy fine sand	SM, SP-SM	A-2, A-3, A-4	0	0	100	100	80-100	5-40	0-14	NP
		6-80	Fine sand,	SP, SP-SM, SM	A-2, A-3	0	0	100	100	75-100	1-20	0-14	NP
			sand, loamy			!	ļ	!			!		!
			fine sand										
Seelyeville	l l 5	   0-12	Muck	  PT	  A-8	   0	   0	 	 	 	 		 
beeryeville	J		Muck, mucky	1	A-8	0	0						
	i I	== 00	peat					<u> </u>	 	 	i	i	<u> </u>
	İ	İ	į -	İ		İ	İ	İ	i	İ	İ	i	İ
544:				ĺ		ĺ	İ	ĺ	İ	ĺ	ĺ	İ	ĺ
Cathro	90	0-8	Muck	PT	A-8	0	0						
		8-40	Muck	1	A-8	0	0						
		40-80	Sandy loam,		A-4, A-6	0-1	0-5	85-100	75-100	60-100	35-90	20-40	5-20
			loam, clay	CL, CL-ML									
	l I	  -	loam	l I	l I	 		 		 			
Percy, very	l I	 		 	 	 	l I	 	 	 	l I		 
cobbly	l 4	   0-8	Loam	SC-SM, CL,	  A-4, A-6	0-2	1-5	90-100	85-100	  70-95	35-70	20-40	   5-15
	_			CL-ML, SC									
	İ	8-23	Loam, fine	CL, CL-ML	A-4	0-1	1-5	85-100	85-98	55-90	35-70	20-30	5-10
		İ	sandy loam,	İ	İ	İ	İ	İ	į	į	į	İ	İ
			sandy loam										
		23-80	Loam, fine	CL, SC, CL-	A-4	0-1	1-5	85-100	85-98	55-90	35-70	15-30	5-10
			sandy loam,	ML, SC-SM					[		[		
			sandy loam	!		ļ		ļ	!	ļ	ļ	!	ļ

Map symbol	Percent	Depth	USDA texture	Classif	ication	Frag	ments		rcentago sieve n	_	ng	  Liquid	
and	of			Unified	AASHTO	>10	3-10	4	10	40	200	limit	ticity  index
component name	map unit	In	<u> </u>	Unified	AASHTO	Inches   Pct	Pct	4	10	40	200	Pct	index
544			į					į					
544: Grygla	3	0-6	Loamy fine sand	  ewrec_ewr	  A-2	0	   0	100	   100	   05_05	  15-35	  15-25	  NP-7
Grygra	3		Sand, fine		A-2, A-3	0	0-1	95-100	1		1		NP-5
		0 20	sand, loamy	SC-SM					   	   		   	
	i	26-80	Loam, fine	CL, CL-ML	A-4, A-6	0-1	0-5	95-100	80-100	70-85	50-70	20-40	5-20
j	İ		sandy loam,	į	į	į	j	į	İ	į	į	į	į
			silt loam										
Seelyeville	3	0-12	Muck	  PT	  A-8	0	0		 	 		 	
		12-80	Muck, mucky peat	PT 	A-8 	0	0		 	 	 	 	 
546:			 	 			 		 	 	 	 	
Lupton	90	0-16	Muck	PT	A-8	0	10-30		i			i	
		16-80	Muck	PT	A-8	0	10-30						
Bullwinkle	0 to 10	0-16	Muck	  PT	  A-8	0	  10-25		 	 	 	 	
	j	16-48	Muck	PT	A-8	0	10-25		i	i		i	j
		48-80	Silt loam	CL, CL-ML	A-6, A-4	0-1	0-5	100	95-100	85-100	65-90	25-35	5-15
Dora	0 to 10	0 - 8	Muck	  PT	  A-8	0	0-5		 	 	 	 	
		8-26	Muck	PT	A-8	0	0-5						
		26-80	Silty clay   loam, silty   clay, clay	CL, CH   	A-7   	0   	0	100   	100   	90-100   	90-100   	45-80   	35-50   
Tawas	0 to 10	0-10	Muck	  PT	  A-8	0	   1-10		 	 	 	 	
	 	10-27	Muck, mucky peat	PT	A-8	0	0-10	 	i I	i I	j I	i I	) 
		27-80	Fine sand,   sand, loamy   sand	SP-SM, SP, SM   	A-2-4, A-3   	0   	0   	80-100   	60-100   	50-75   	0-20   	0-14   	NP   
547:							İ	İ					
Deerwood	90		Muck	1	A-8	0	0						
		14-16	Fine sand,   loamy sand,   fine sandy   loam	SM, SP-SM   	A-2, A-4   	0   	0-5	95-100   	90-100   	50-75   	12-50   	0-20   	NP - 4   
		16-80	Fine sand,   sand, gravelly   sand		  A-1, A-2, A-3   	   0   	   0-5   	  75-100   	  55-100   	  35-70   	   1-25   	   0-14   	   NP   

Table 23.--Engineering Index Properties--Continued

Table 23.--Engineering Index Properties--Continued

Map symbol	Percent	Depth	USDA texture		Classif	icati	on		Fragi	ments		_	e passi	ng	  Liquid	   Plas-
and	of	_	İ	Î					>10	3-10	İ				limit	ticity
component name	map unit		İ	ĺ	Unified	A	ASHTO		inches	inches	4	10	40	200	İ	index
		In							Pct	Pct			[		Pct	
547:				 		 			 		 	 		 		
Markey	4	0-42	1	PT		A-8			0	0						
		42-80	Fine sand,   loamy sand,   coarse sand	SM,     	SP, SP-SM	A-2,     	A-3		0   	0     	100     	75-100     	60-75     	0-20   	     	NP   
Rosewood	3	0-11	  Fine sandy loam	sc,	SC-SM, SM	A-2,	A-4		0	0	100	97-100	65-90	30-50	15-30	NP-10
		11-19	Fine sandy   loam, loamy   fine sand,   sandy loam	SM,     	SC, SC-SM	A-2,     	A-4		0   	0     	100     	95-100     	60-85     	25-45     	15-30     	NP-10   
		19-65	Fine sand, sand	SM,	SP-SM	A-1,	A-2,	A-3	0	0		75-95		5-25	5-15	NP
		65-80	Fine sand,   sand, coarse   sand	SM,     	SP-SM	A-1,     	A-2,	A-3	0   	0     	85-100     	75-95     	40-80     	5-35     	5-15     	NP     
Syrene	3	0-11	Sandy loam	sc,	SC-SM, SM	A-4			0	0-3	95-100	85-100	55-70	35-50	15-35	NP-10
-		11-19	Loam, sandy loam, sandy clay loam	SM,   		A-4			0	0-3	95-100	  85-100 	55-75   	35-65 	20-40	1-10 
		19-80	Stratified   gravelly   coarse sand to   loamy fine   sand	į	SP-SM	A-1,     	A-2,	A-3	0     	2-5     	75-95     	55-80     	30-60     	0-10     	5-20       	NP-5     
550:				 		 			 	 	 	 	 	 	 	 
Dora	90	0-5	Muck	PT		A-8			0	0						
		5-31	1	PT		A-8			0	0						
		31-80	Silty clay   loam, silty   clay, clay	CH,     	CL	A-7   			0   	0   	100   	100   	90-100     	90-100     	45-80   	35-50     
Boash	4	0-9	Clay loam	CL		  A-7			0	0-2	95-100	90-100	80-100	  70-95	40-50	20-25
		9-29	Clay, silty   clay loam,   silty clay	CH, 	CL	A-7			0	0-2	95-100	90-100   	80-100   	70-95	45-80	25-50
		29-80		CL,	CL-ML	A-4,   	A-6		0-1	   1-5   	95-100	  85-98   	  70-95   	  50-90   	24-35   	6-15
Seelyeville	3	0-12	Muck	  PT		  A-8			   0	   0	 	 		 		
			Muck, mucky   peat	PT 		A-8			0	0	   	   	   	   	   	   

Classification Fragments Percentage passing

Table 23.--Engineering Index Properties--Continued

Map symbol	Percent	   Depth	USDA texture	Classif:	cation	Frag	ments		rcentage sieve n	e passır umber	ıg	  Liquid	   Plas-
and	of		!			>10	3-10	ļ				limit	-
component name	map unit			Unified	AASHTO	<u> </u>	inches	4	10	40	200		index
		In				Pct	Pct					Pct	
550:			l I	 	İ	 		 	 				
Woodslake	3	   0-8	Clay	MH, CH	   A-7	l I 0	0	100	   98-100	  90-100	  85-98	  50-65	  20-35
MOOGBIGHE			Clay		A-7	0	0		1	90-100			
			Clay		A-7	0	0		1	90-100			
		36-80	Clay, silt	CH, CL	A-6, A-7	0	0	100	100	90-100	70-95	40-65	20-40
			loam, silty   clay loam	  - 		   	   	    -	   	   	   	 	   
561:				 			i	! 	 				
Bullwinkle	90	0-16	Muck	PT	A-8	0	10-25	i	i				
		16-48	Muck	PT	A-8	0	10-25	i	i	i i			
		48-80	Silt loam	CL-ML, CL	A-6, A-4	0-1	0-5	100	95-100	85-100	65-90	25-35	5-15
Lupton	4	0-16   16-80	1	PT  PT	A-8 A-8	0   0	10-30	 	 	 		 	
		10-00 	Muck	1	A-0 	0	10-30	 	 	 			
Northwood,				 			i	! 	 				
wooded	4	0-15	Muck	PT	A-8	0	0-5	i	i				
		 	Fine sandy   loam, loamy   fine sand,   loamy sand	 	A-2, A-4	0     	0-3     	   	90-100     	   	15-50     	0-35	   
		 	Coarse sand,   fine sand,   loamy fine   sand	 	A-3, A-2	0     	   	   	80-100     	   	5-35   	0-14   	NP   
		39-80   	Loam, clay   loam, fine   sandy loam 	ML, CL-ML, CL     	A-4, A-6 	0-1     	1-5     	95-100     	90-100     	75-100      	50-80     	20-40   	3-20   
Chilgren	2	0-5 	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0-1 	0-3	90-100 	85-100 	60-85	25-55	15-35 	NP-10
		5-9 	Loamy sand, loamy fine sand, fine sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0-1	0-3	75-100   	70-100   	50-85   	15-55   	15-35   	NP-10   
		<u> </u> 	Clay loam,   loam, sandy   clay loam	sc	A-4, A-6, A-7	і І	 	 		60-95 			7-20 
		16-80   	Loam, sandy   loam, fine   sandy loam	SM, SC, ML,   CL 	A-4	0-1   	2-5   	75-100   	70-100   	50-90   	35-70   	20-30   	3-10   
		1	I	I	I	1	1	ı	I	ı	1	1	ı

Table 23.--Engineering Index Properties--Continued

Map symbol	   Percent	Depth	USDA texture	Classif	ication	Frag	ments		rcentago sieve n	_	ng	  Liquid	   Plas-
and	of	_	Ì		1	>10	3-10	İ				limit	ticity
component name	map unit		Ì	Unified	AASHTO	inches	inches	4	10	40	200	İ	index
		In	ļ	!	!	Pct	Pct	ļ .	İ	ļ .		Pct	<u> </u>
563:	 		 	 	 	l I	 	 	 	 	 		 
Northwood	90	0-11	Muck	PT	A-8	i o	0				i	i	
			Fine sandy   loam, loamy   fine sand,   loamy sand	1	A-2, A-4   	0	0-3	  95-100     	90-100     	  51-85     	  15-50   	0-35	   NP-10   
		16-25	Coarse sand,   fine sand,   loamy fine   sand	SP-SM, SM   	A-2, A-3   	0	0-3   	  95-100     	80-100     	70-95     	5-35     	0-14     	NP     
		25-80	Loam, clay   loam, fine   sandy loam	ML, CL, CL-ML	<b>A-4, A-6</b>     	0-1	1-5     	95-100     	90-100	75-100     	50-80   	20-40	3-20
Grygla	4	0 - 6	Loamy fine sand	SC-SM, SM	A-2	0	0	100	100	85-95	15-35	15-25	NP-7
		6-26	Sand, fine   sand, loamy   fine sand	SC-SM, SM,	A-2, A-3 	0	0-1 	95-100   	90-100	70-95   	5-35 	15-20 	NP - 5   
		26-80	Loam, fine sandy loam, silt loam	CL, CL-ML	A-4, A-6   	0-1	0-5   	  95-100     	80-100     	70-85     	50-70     	20-40	5-20   
Berner	3	0-23	Muck	PT	A-8	0	0						
		23-41	Sand, fine   sand, loamy   fine sand	SP, SM, SP-SM   	A-2, A-3   	0   	0-2   	90-100   	85-100   	60-80   	0-25	0-20	NP-3   
		41-80	Loam, fine   sandy loam,   silt loam	CL-ML, CL   	A-4, A-6   	0-1   	1-5     	95-100     	85-100     	60-90     	50-80     	20-40   	5-20     
Strandquist	3	0 - 8	Loam	SC-SM, CL-ML,	A-4, A-6	0	0-3	95-100	95-100	75-90	45-70	20-40	5-20
			gravelly coarse sand, very gravelly sand	SP, SP-SM,   GP-GM, GP   	<b>A-1</b>     	0	     	35-75       	     	5-40     	0-10     	0-20     	 
		35-80	Silty clay   loam, loam,   sandy loam	SC-SM, SC,   CL, CL-ML   	A-4, A-6   	0-1   	1-5     	95-100     	80-100     	65-90     	35-80     	20-40   	5-20     

Table 23.--Engineering Index Properties--Continued

Map symbol	   Percent	Depth	USDA texture	Classi	fication	Frag	ments	1	rcentag	-	_	  Liquid	   Plas-
and	of		İ			>10	3-10	İ				limit	ticity
component name	map unit			Unified	AASHTO	inches	inches	4	10	40	200	ĺ	index
		In	İ	1	İ	Pct	Pct	İ	Ī		Ī	Pct	Ī
	j		İ	İ	j	į	İ	į	į	İ	İ	İ	İ
565:													
Eckvoll	85	0-6	Loamy fine sand	SM, SC-SM	A-2, A-4	0	0-2	90-100	85-100	45-80	25-40	15-20	NP-7
		6-21	Fine sand,	SM, SP-SM	A-1, A-2, A-3	0	0-2	90-100	85-100	45-75	5-30	15-20	NP-4
			sand, loamy										
			fine sand										
		21-26		SC, CL	A-4, A-6, A-7	0	0-5	90-100	85-98	65-95	45-75	25-50	7-25
			sandy clay							!	!	ļ	
			loam, loam										
		26-80		CL, CL-ML	A-4, A-6, A-7	0-1	1-5	90-100	85-98	70-95	50-80	25-45	5-20
			loam, fine   sandy loam	l I									
	 		Sandy IOam	 		 	l I	 	 			 	 
Chilgren	l 5	   0-5	  Fine sandy loam	SM. CL-ML.	A-2, A-4	0-1	0-3	90-100	  85-100	  60-85	25-55	15-35	  NP-10
0				ML, SC-SM	/	-							
	i	5-9	Loamy sand,	SC-SM, SM,	A-2, A-4	0-1	0-3	75-100	70-100	50-85	15-55	15-35	NP-10
	İ		loamy fine	ML, CL-ML		i	İ	i	i	i	i	İ	İ
	j		sand, fine	İ	j	į	İ	į	į	į	į	İ	į
	į į		sandy loam	ĺ		İ	İ	İ	İ	İ	İ	ĺ	ĺ
		9-16	Clay loam,	ML, SM, SC,	A-4, A-6, A-7	0-1	1-5	75-100	70-100	60-95	35-85	25-50	7-20
			loam, sandy	CL									
			clay loam										
		16-80	Loam, sandy	CL, SM, SC,	A-4	0-1	2-5	75-100	70-100	50-90	35-70	20-30	3-10
			loam, fine	ML			ļ			!	!		!
			sandy loam									ļ	
Grygla	   5	   0-6	Loamy fine sand	laa ay ay	  A-2	   0	   0	100	   100		115 25	  15-25	   ND 7
Grygra	5		Sand, fine	SP-SM, SM,	A-2, A-3	0	0-1		90-100			15-25	1
	 	0-20 	sand, loamy	SC-SM	A-Z, A-J	0	0-1		<b>50-100</b> 	70-33	3-33	13-20	141 - 5
	 		fine sand	50 511		i	l I		! 	i	ì	İ	i
	i	26-80	1	CL-ML, CL	A-4, A-6	0-1	0-5	95-100	80-100	70-85	50-70	20-40	5-20
	i		sandy loam,			i	İ	İ		i	1	İ	i
	İ		silt loam	İ		i	İ	i	i	i	i	İ	İ
	j i		İ	İ	j	i	İ	į	į	i	İ	į	į
Hiwood	5	0-3	Fine sand	SM, SC-SM	A-2, A-3	0	0	100	95-100	80-95	5-25		NP
		3-22	Sand, fine	SC-SM, SM	A-3, A-2	0	0	100	95-100	80-95	5-20		NP
			sand, loamy										
			sand										
		22-80	Sand, fine sand	SP, SP-SM	A-2, A-3	0	0	100	95-100	80-95	1-12		NP

Table 23.--Engineering Index Properties--Continued

Map symbol	of		USDA texture	Classif	ication	i	ments		rcentag sieve n	-	-	Liquid	
and	- 1		1	Unified	AASHTO	>10	3-10	4	10	40	200	limit	ticity  index
component name	map unit	In	1	Unified	AASHTO	Pct	Pct	4	1 10	40	200	   Pct	Index
		111	l I		I I	PCL	PCL 	 	 	 	1	PCL	1
568:	i		İ	i			İ	i	<u> </u>		i	İ	İ
Zippel	85	0-10	Very fine sandy   loam	CL-ML, ML	A-4 	0	,   0 	100	95-100	85-100 	50-75	15-25	NP-5
		10-16	Very fine sand,   very fine   sandy loam,   loamy very   fine sand	ML, CL-ML	<b>A-4</b>     	0	0	100     	95-100	85-100     	50-95     	15-25     	NP-5     
		16-80	Stratified silt   loam to very   fine sand	CL-ML, ML   	A-4   	0	   0   	100   	  95-100   	85-100     	50-95     	  15-25   	NP-5   
Augsburg,							İ	i	<u> </u>	i	İ	İ	İ
depressional	5	0-9	Mucky very fine   sandy loam	ML, OL, CL-	A-4, A-6	0	0	100	100	95-100	50-90	15-40	NP-15
	 	9-16	Loam, very fine   sandy loam,   silt loam	CL, ML, CL-ML   	A-4   	0 	0   	100   	100   	95-100   	80-90   	15-35   	NP-10   
		16-32	Loamy very fine sand, very fine sandy loam, loam	CL-ML, ML, CL	A-4   	0   	0     	100     	100     	95-100     	80-90     	  15-35     	NP-10   
		32-80	Silty clay,   clay, silty   clay loam	CH   	A-7   	0   	0     	95-100     	95-100     	95-100     	95-100     	50-80	35-55   
Sago	5	0-14	Muck	PT	A-8	0	0						
		14-80	Stratified fine   sand to silt   loam	SC, CL, ML, SM	A-2, A-4   	0	0   	98-100	95-100   	70-95   	15-85   	15-30   	2-9
Skime	5	0-6	Loamy fine sand	SC-SM, SM	  A-2	0	0	100	  95-100	  65-90	15-35	0-20	NP-5
	 	6-17	Loamy sand, fine sand, loamy fine sand	SC-SM, SM     	A-2   	0     	0     	95-100     	95-100     	45-90     	15-35     	0-20	NP - 5   
	 	17-22	Sandy loam,   fine sandy   loam	SC-SM, SC	A-2, A-4 	0	0   	100   	100   	60-85	30-50	20-30	5-10   
	ĺ		Fine sand, sand		A-2, A-3	0	0	100	100	50-80	5-35	0 - 0	NP
		72-80	Stratified fine   sand to very   fine sandy   loam to silt   loam	SC-SM, CL-ML,   SM   	A-2, A-4   	0	0     	100     	100     	65-95       	15-85       	15-30       	NP-10     

Map symbol	   Percent	Depth	USDA texture	Classif	ication	Fragi	ments		rcentage sieve n	_	-	  Liquid	   Plas
and	of     map unit			Unified	AASHTO	>10	3-10		10	40	200	limit	ticity
component name	map unit			Unified	AASHTO			. 4	1 10	1 40	200		index
		In		 	l I	Pct	Pct		 	 	 	Pct	 
569:							! 			İ	i		
Wabanica	85	0-8	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	95-100	95-100	60-90	25-35	5-15
		8-19	Silt loam,	CL, CL-ML	A-4, A-6	0	0	100	95-100	85-100	60-95	25-40	5-15
	İ		silty clay	ĺ	İ	ĺ	ĺ	İ	ĺ	ĺ	ĺ	İ	
			loam										
		19-80	Silt loam,	CL-ML, CL	A-4, A-6	0	0	100	95-100	85-100	60-95	25-40	5-15
			silty clay										
			loam	ļ	ļ					ļ	ļ		
Warroad	   6	0-11	  Fine sandy loam	  ML.SM	  A-4	0	   0	  95-100	  95-100	  70-85	  35-55	20-25	  NP-5
			Loamy fine	SM	A-2	0	0		95-100			1	NP
			sand, fine		   		   	   	   	   	   	İ	
	i i	26-80	Silt loam,	CL	A-6	i o	0	100	95-100	85-100	70-90	25-40	10-15
	i i		silty clay	i	i	i	İ	i	İ	İ	İ	i	İ
			loam	į	į	į		į	į	į	į	į	į
Sax	   4	0-15	Muck	  PT	  A-8	   0	   0		 	 	 		
	i i	15-24	Mucky silt	CL-ML, CL	A-4, A-6	i o	0	100	100	90-100	60-85	20-40	5-15
	i i		loam, silt	i	i	i	İ	i	İ	İ	İ	i	İ
	i i		loam, silty	i	į	İ	İ	i	İ	į	i	i	i
	i i		clay loam	İ	İ	i	j	i	İ	į	i	İ	i
	i i	24-39	Silt loam,	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	60-85	20-40	5-15
	į į		silty clay	İ	İ	j	İ	į	İ	į	İ	İ	İ
	į į		loam	İ	İ	j	İ	į	İ	į	İ	İ	İ
	j	39-71	Silt loam,	ML, CL-ML, CL	A-4, A-6	0	0	100	100	90-100	50-90	16-40	NP-15
	ı İ		silty clay										
j	l İ		loam, very										
	ı İ		fine sandy			1							

Table 23.--Engineering Index Properties--Continued

Map symbol and	   Percent   of	   Depth	USDA texture	Classif	icatio	on	Fragi _    >10	ments		rcentage sieve n	_	ng	  Liquid  limit	1
component name	map unit	l I	 	   Unified	   7\2	ASHTO		3-10  inches	4	10	40	200	 	index
Component name	map unic	In				ADHIO	Pct	Pct	-	10	=0	200	Pct	
569:				 	 					 				
Wabanica	85		!		A-4,		0	0   0		95-100				5-15
		8-19   	silt loam,   silty clay   loam	CL, CL-ML   	A-4,   	A-6		0   	100 	   	   	60-95   	25-40	5-15
		19-80   	Silt loam,   silty clay   loam	CL-ML, CL   	A-4,   	A-6	0	0   	100   	  95-100   	  85-100   	60-95   	25-40	5-15
Warroad	l l 6	   0-11	  Fine sandy loam	  ML, SM	   A-4		0	l I 0	95-100	  95-100	  70-85	  35-55	20-25	  NP-5
			Loamy fine sand, fine sand	<b>SM</b> 	A-2   		0	0	95-100					NP
		26-80	Silt loam,   silty clay   loam	  -   CL	A-6   		0	0   	100   	95-100	85-100   	70-90   	25-40	10-15
Sax	   4	   0-15	Muck	   <b>PT</b>	  A-8		0	   0		 	 	 		
	-		1	CL-ML, CL   	A-4,   	A-6	0	0     	100     	   100   	  90-100   	  60-85   	20-40	5-15
		24-39   	Silt loam,   silty clay   loam	CL, CL-ML	A-4,	A-6	0	0   	100   	100   	  90-100   	60-85	20-40	5-15
		39-71     	Silt loam,   silty clay   loam, very   fine sandy   loam	ML, CL-ML, CL	A-4,     	A-6	0	0     	100     	100     	90-100     	50-90     	16-40	NP-15     
		71-80   	Silty clay   loam, silty   clay, clay	  CL, CH   	   <b>A-7</b>   		0	   0 	100	   100   	  90-100   	  75-95   	40-80	15-50
Grano	3	   0-11	Loam	  CL-ML, SC-SM	  A-4,	A-6	0	   0	  95-100	  90-97	  65-85	  45-65	20-35	5-15
		11-41   	Silty clay   loam, silty   clay, clay	CL, CH   	A-7   		0   	0   	95-100   	90-97   	80-95   	70-95   	40-80   	20-50
		41-80       	Clay, silty   clay, silty   clay loam,   stratified   silt loam to   clay	CH, CL	<b>A-7</b>       		0       	0	95-100	90-100       	80-97       	75-95       	40-80     	20-50

Table 23.--Engineering Index Properties--Continued

Map symbol	Percent	   Depth	USDA texture	Classif	ication	İ	ments		_	e passi: umber	ng		   Plas-
and component name	of map unit	 	1	Unified	AASHTO	>10	3-10	   4	10	40	200	limit	ticity  index
component name	map unit	   In		Unified	AASHTO	Pct	Pct	<del>4</del> 	10	40	200	Pct	Index
569:	 	  -	[ [	 	 	 	 	 	[ [	 	 		
Enstrom	2	0-6	Loamy fine sand	SM, SP-SM	A-2	0	0	100	95-100	80-95	10-25		NP
	   	6-29   	Fine sand,   sand, loamy   sand	SP-SM, SM 	A-2, A-3 	0   	0-3 	95-100   	80-100   	50-80   	5-30 	0-20	NP - 3 
	 	29-80     	Fine sandy   loam, loam,   silty clay   loam	SC-SM, CL, CL-ML, SC	A-4, A-6     	0-1	0-3	90-100     	80-95     	65-90     	35-80	20-40	5-15     
570:	 	 	 			! 	 	l I	 		l I		 
Faunce	85	0-2	Loamy fine sand	SM, SP-SM	A-2	0	0	95-100	80-100	65-90	10-35	i	NP
	 	2-14   	Sand, fine   sand, loamy   sand	SM, SP-SM	A-2, A-3 	<b>0</b>   	0   	95-100   	80-100   	55-80   	0-20	0-20	NP-3 
	 	14-24	gravelly loamy coarse sand, sand, gravelly sandy loam	j	A-2, A-3   	0	0-2	95-100     	65-100     	55-80     	0-20	0-20	NP - 3   
	 	24-80   	Stratified coarse sand to gravelly sand	SP-SM, SP   	A-1, A-2, A-3   	0-1   	0-2	75-90     	50-85   	40-65     	0-10   	   	NP   
Clearriver	7	0-2	Loamy fine sand	SM, SP-SM	A-2	0	0	95-100	85-100	40-90	10-35	15-25	NP-10
	j I	2-21	Sand, loamy	SM, SP-SM	A-2, A-3	0 	0 	95-100	85-100	55-90	5-35		NP
	 	21-80   	Stratified fine sand to gravelly coarse sand	SP, SP-SM     	A-1, A-2, A-3   	0	0-2   	  75-100     	65-85     	40-65     	0-10     	     	NP     
Zimmerman	   4	   0-6	  Fine sand	SM, SP-SM	  A-2	   0	l I 0	100	  95-100	  95-100	  10-20	15-20	   NP
	 	6-80	Fine sand,   loamy fine   sand	SM, SP-SM	A-2, A-3 	0	0	100		60-100   		0-20	NP - 5 
Meehan	   3	   0-8	Loamy sand	  SM	  A-1, A-2	   0	   0	  90-100	  75-100	  40-90	  15-30	0-14	   NP
	     		Sand, loamy   sand, loamy   coarse sand	1	A-1, A-2, A-3				75-100   		3-30	0-14	NP 
		31-80	Sand, coarse   sand	  SP-SM, SP 	A-1, A-2, A-3	0	0	90-100	  75-100 	40-90	0-5	0-14	NP 
Pits, gravel	   1 	   	 	   		   	   	   	   	   	   		

Map symbol	Percent	Depth	USDA texture	Classif	ication	_ii	ments		rcentag	e passi: umber	ng		   Plas-
and component name	of map unit		l I	Unified	AASHTO	>10	3-10 inches	   4	10	40	200	limit	ticity index
	map unit	In			ARBITO	Pct	Pct	-	10	40	200	Pct	Index
581: Percy	90	0-11	    Fine sandy loam	    sc, sc-sm	    A-4	0	     0-1	    90-100	    85-100	    60-85	    30-55	20-30	     5-10
-			Loam, fine sandy loam, sandy loam	CL, CL-ML	   <b>A-4</b> 	0-1	   1-5 	85-100   	85-98   	55-90   	35-70	20-30	5-10   
		15-60	Loam, fine sandy loam, sandy loam	CL, CL-ML, SC, SC-SM	<b>A-4</b>   	0-1	1-5     	85-100   	85-98     	55-90     	35-70   	15-30	5-10   
Haug	5	0-10	Muck	PT	A-8	0	0					i	i
		10-16	Mucky sandy   loam, fine   sandy loam,   loam	ML, SM, CL,   OL   	A-4, A-6   	0-1   	0-3   	95-100     	90-100     	70-85     	35-65     	15-40   	1-15     
		16-80	Loam, sandy   loam, fine   sandy loam	SM, CL, ML,   SC   	A-4, A-6   	0-1	1-5     	95-100     	70-100     	60-95     	35-65     	15-40   	1-15     
Boash	3	0-9	Clay loam	CL	A-7	0	0-2	1	1	80-100			20-25
		9-29	Clay, silty   clay loam,   silty clay	CH, CL   	A-7   	0   	0-2   	95-100   	90-100   	80-100   	70-95   	45-80   	25-50   
		29-80	Loam, sandy   loam, silt   loam	CL-ML, CL     	A-4, A-6   	0-1	1-5     	95-100     	85-98     	70-95     	50-90     	24-35   	6-15   
Skagen	2	0-9	Loam	CL, CL-ML, ML	A-4	0-1	0-3	95-100	85-100	75-95	55-75	20-30	NP-10
		9-19	Loam, fine   sandy loam,   sandy loam	CL-ML, SC-SM   	A-4   	0-2	1-5   	85-100   	85-98   	55-90   	35-70   	20-30	5-10   
		19-80	Loam, fine   sandy loam,   sandy loam	CL-ML, SC-SM	<b>A-4</b>   	0-2	1-5     	85-100   	85-98     	55-90     	35-70   	20-30	5-10   
582:			į_	ļ			į						
Roliss	85		Loam  Loam, clay   loam, silty	CL, CL-ML  CL 	A-4, A-6  A-6, A-7 	0-1	0-3   1-5 		1	80-100  80-90 		1	5-20  10-30 
		20-80	clay loam  Loam, clay loam 	  CL, CL-ML 	  A-4, A-6, A- <sup>*</sup> 	7 0-1	   1-5 	  95-100 	  80-100 	  80-95 	  60-80 	20-50	   5-30 
Roliss, depressional	7	0-8 8-13	  Loam  Loam, clay	  CL, CL-ML  CL	  A-4, A-6  A-6, A-7	0-1	   0-1   1-5	1	1	  80-100  80-90		20-40	   5-20  10-30
		13-80	loam, silty   clay loam  Loam, clay loam	    CL, CL-ML	    A-4, A-6, A-	7 0-1	     1-5	    95-100	    80-98	    80-95	    60-80	20-50	     5-30

Table 23.--Engineering Index Properties--Continued

Table 23.--Engineering Index Properties--Continued

Map symbol	   Percent	Depth	USDA texture	Classif	ication	Frag	ments		rcentage sieve nu	_	ng	  Liquid	   Plas-
and	of		İ			>10	3-10	İ				limit	ticity
component name	map unit		İ	Unified	AASHTO	inches	inches	4	10	40	200	Ï	index
		In				Pct	Pct					Pct	
582:				 			 	 					 
Boash	5	0-9	Clay loam	CL	A-7	0	0-2	95-100	90-100	80-100	70-95	40-50	20-25
		9-29	Clay, silty clay loam, silty clay	CL, CH   	<b>A-7</b> 	0	0-2   	95-100   	90-100   	80-100   	70-95   	45-80	25-50
		29-80	Loam, sandy   loam, silt   loam	CL, CL-ML   	A-4, A-6   	0-1	1-5   	95-100   	85-98   	70-95   	50-90   	24-35   	6-15   
Haug	3	0-10	Muck	  PT	  A-8	0	0	 	 	 			 
_		10-16	Mucky sandy   loam, fine   sandy loam,   loam	SM, ML, CL,   OL 	A-4, A-6   	0-1	0-3   	95-100     	90-100	70-85 	35-65     	15-40     	1-15     
		16-80	Loam, sandy loam, fine sandy loam	SC, ML, CL, SM	A-4, A-6   	0-1	1-5     	95-100     	70-100	60-95	35-65   	15-40   	1-15   
583:				İ		İ	İ	İ				İ	İ
Nereson	85	0-7	Fine sandy loam		A-4	0-1						15-20	
		7-11	Loam, fine   sandy loam,   sandy loam	SC-SM, SC,   CL, CL-ML 	A-4   	0   	0-5   	90-100   	80-98   	55-90   	40-60   	20-28   	5-10   
		11-29	Sandy loam,   loam, gravelly   loam	SM, CL-ML,   CL, ML, SC-   SM	A-4   	0-1	1-5   	85-95   	75-95   	45-85   	10-55   	15-30 	NP-10   
		29-80	Sandy loam,   loam, gravelly   loam	CL-ML, SM, SC-SM, CL,	<b>A-4</b>   	0-1	1-5   	85-95   	75-95   	45-85 	10-55   	15-30   	NP-10   
Percy	10	0-10	  Loam 	SC, SC-SM,	  A-4, A-6 	0-1	0-3	90-100	  85-100 	  70-95 	35-70	20-40	   5-15 
		10-25	Loam, fine sandy loam, sandy loam	CL-ML, CL   	A-4   	0-1	1-5   	85-100   	85-98   	55-90 	35-70   	20-30	5-10   
		25-80	Loam, fine   sandy loam,   sandy loam	SC-SM, CL-ML,   CL, SC 	A-4   	0-1   	1-5   	85-100   	85-98   	55-90   	35-70   	15-30   	5-10   

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number				Liquid	
				Unified	AASHTO	>10    inches    Pct	3-10 inches	4   10   40   200				limit	ticity
								-	10	40	200	Pct	Index
583:			 	 			 	 	 	 			
Pelan	3	0-6 6-12	Sandy loam  Very gravelly   sandy loam,   very gravelly   sandy clay   loam	SM, SC-SM  SC, GC, SM,   GM 	A-2, A-4  A-1, A-2 	0 0	0-3   2-5 		75-100  25-50   		30-50   5-35   	0-20  20-30 	NP - 5   NP - 10   
		12-24   	Very gravelly   coarse sand,   very gravelly   fine sandy   loam	SP, GP, GP- GM, SP-SM	  A-1, A-2   	0	2-5     	  40-85     	  25-50   	   5-50     	   1-10     	0-14	NP     
		24-60	Fine sandy   loam, sandy   loam, loam	SC, CL, ML,	A-4, A-6   	0-1	   1-5   	90-100   	85-95   	60-90   	40-65	10-30	1-15
Foxhome	2	0-10	Sandy loam	SM	   A-4	0	0-2	  95-100	90-100	  75-90	35-50	15-30	NP-5
		10-15   	Fine sand,   loamy fine   sand, sand	SW-SM, SM 	A-2, A-3   	0-1	0-3   	95-100   	90-100   	70-85   	5-35	0-25	NP - 5 
		15-23	1	SP, SP-SM, GP-GM, GP	A-1   	0	2-5     	30-65     	15-45   	5-40   	0-10	0-20	NP-1   
		23-80	-	CL, CL-ML, ML   	  A-4, A-6   	0-1	   1-5   	  90-100     	  85-100   	  75-90     	50-80	20-40	1-15
627:			ļ			į	į	į	į	į	ļ	į	į
Tawas	90	0-10   10-27	Muck  Muck, mucky   peat	PT   PT 	A-8  A-8 	0 0	1-10   0-10 	 	 	 			
		27-80	Fine sand,   sand, loamy   sand	SM, SP, SP-SM	A-2-4, A-3 	0	0   	80-100   	60-100   	  50-75   	0-20	0-14	NP
Leafriver	4	0-10	Muck	PT	  A-8	0	0-5		 	 			
		10-13 	Loamy sand,   sandy loam,   fine sand	SM   	A-2-4, A-4   	0	0   	100   	95-100   	55-80   	15-40 	15-20   	NP - 4 
		13-80	· ·	SM, SP-SM, SP	A-1-b, A-2, A-2-4, A-3	0	0   	95-100     	80-100   	45-70   	3-35		NP 
Lupton	4		  Muck  Muck	  PT  PT	  A-8  A-8		  10-30  10-30	   	   	   			

Table 23.--Engineering Index Properties--Continued

Table 23.--Engineering Index Properties--Continued

Map symbol	Percent	Depth	USDA texture		Classif	ication	Frag	ments		_	e passinumber	-	  Liquid	   Plas-
and	of		İ	Ì			>10	3-10	İ				limit	ticity
component name	map unit		İ	τ	nified	AASHTO	inches	inches	4	10	40	200	İ	index
		In				<u> </u>	Pct	Pct					Pct	
627:				 		 				 		 		
Cormant	2	0-6	Loamy fine sand	SM,	SP-SM	A-2, A-3, A-4	0	0	100	100	80-100	5-40	0-14	NP
		6-80	Fine sand,   sand, loamy   fine sand	SP,   	SM, SP-SM	A-2, A-3   	0   	0   	100   	100   	75-100   	1-20   	0-14   	NP   
630:			[			 			 	 		 		 
Wildwood	90	0-12	Muck	PT		A-8	0	0	i	i		i		
		12-33	Clay, silty clay, silty clay loam	CH 		<b>A-7</b> 	0	0   	100 	100   	95-100	85-98   	75-90	50-65
		33-80		CH		  A-7 	0	0	100	  85-100 	  85-100 	  60-95 	  65-90 	40-65
Boash	4	0-9	Clay loam	CL		  A-7	0	0-2	95-100	  90-100	80-100	  70-95	40-50	20-25
		9-29	Clay, silty   clay loam,   silty clay	CH, 	CL	<b>A-7</b> 	0   	0-2	95-100   	  90-100   	80-100   	70-95   	45-80   	25-50
		29-80	Loam, sandy   loam, silt   loam	CL,   	CL-ML	A-4, A-6 	0-1	1-5   	95-100	85-98   	70-95   	50-90   	24-35	6-15
Dora	4	0-5	Muck	  PT		  A-8	0	   0	 	 		 		
	į	5-31	Muck	PT		A-8	0	0	j			i		
		31-80	Silty clay   loam, silty   clay, clay	CL,   	СН	<b>A-7</b>   	0	0	100	100	90-100	90-100	45-80	35-50
Espelie	2	0-10	  Fine sandy loam	SM.	SC, ML	  A-2, A-4	   0	   0	  95-100	  85-100	  60-85	  30-65	  15-25	  NP-8
					-	A-2, A-4   	0				30-80			
		27-80	Clay, silty   clay, clay   loam	CH,   	CL	<b>A-7</b>   	0   	0   	90-100     	85-100     	80-100   	70-100   	40-65   	20-40

Map symbol	   Percent	Depth	USDA texture	Classi	fication	i	ments		rcentago sieve n	e passi: umber	ng	  Liquid	
and component name	of     map unit			Unified	AASHTO		3-10 inches	4	10	40	200	limit	ticity  index
Component name	map unit	In	<u> </u>		AASHIO	Pct	Pct	4	10	40	200	Pct	Index
643:			 	 			 	 	 	 	 		 
Huot	85		Fine sandy loam		A-4	0						15-30	
		14-26	Loamy fine   sand, fine   sandy loam	SM, SC-SM   	A-2, A-4 	0	0   	90-100   	75-100   	60-85   	25-55   	15-30   	NP - 8   
		26-34	Loamy fine   sand, fine   sand	SP-SM, SM	A-2	0	0   	90-100   	  75-100   	50-80   	10-35   	0-20	NP 
		34-80	Clay, silty clay, silty clay loam	CH   	A-7 	0	0-1   	95-100	85-100   	85-100   	70-95   	60-80	35-50   
Thiefriver	   12	0-10	  Fine sandy loam	  ML.SM	   A-4	   0	   0	  95-100	  80-100	  70-90	  35-55	15-30	  NP-10
			Loamy fine sand, fine sandy loam, loamy sand	SM, SC-SM, CL-ML, ML	A-2, A-4 	0	0			60-90   			NP-10   
		16-35		  SM, SP-SM   	A-3, A-2 	0	0-2     	90-100     	  80-100   	  50-80   	5-35     	   	NP   
		35-80	Clay, silty clay, silty clay loam	CL, CH   	A-7   	0	0     	100     	  95-100   	  95-100     	90-100     	40-70   	20-40
Redby	3	0-3	Loamy fine sand		A-2, A-3	0	0	100	95-100		5-25	1	NP-3
		3-28	Fine sand, sand		A-2, A-3	0	0	100	95-100		5-35		NP-3
	 	28-80	Fine sand, sand 	SP, SP-SM 	A-2, A-3 	0	0 	100 	95-100 	80-95 	2-12 	0-14	NP 
644:													
Boash	85   	0-9 9-29	Clay loam  Clay, silty   clay loam,   silty clay	CL  CH, CL   	A-7  A-7 	0   0 	0-2   0-2 					40-50  45-80 	
		29-80	Loam, sandy loam, silt loam	CL, CL-ML	A-4, A-6	0-1	1-5   	95-100	85-98   	70-95   	50-90	24-35	6-15   
Percy	7	0-10	  Loam 	CL, SC-SM,	  A-4, A-6 	0-1	   0-3 	90-100	  85-100 	  70-95 	  35-70 	20-40	   5-15 
		10-25	Loam, fine   sandy loam,   sandy loam	CL-ML, CL   	A-4 	0-1	   1-5   	85-100   	85-98   	   55-90   	35-70   	20-30	5-10   
		25-80	Loam, fine sandy loam, sandy loam	SC, CL-ML, CL, SC-SM	A-4 	0-1	   1-5   	85-100   	85-98   	55-90   	35-70   	15-30   	5-10   

Table 23.--Engineering Index Properties--Continued

Table 23.--Engineering Index Properties--Continued

Map symbol	   Percent	Depth	USDA texture	Classif	ication	Frag	ments		rcentag sieve n	_	ng	  Liquid	   Plas-
and	of					>10	3-10	i				limit	1
component name	map unit		i	Unified	AASHTO		inches	4	10	40	200		index
		In	İ		]	Pct	Pct					Pct	
644:	 		 	 	 	l I		 			 	 	
Woodslake	5	0-8	Clay	CH, MH	A-7	i o	0	100	98-100	90-100	85-98	50-65	20-35
		8-15		CH	A-7	0	0				85-100		1
	i i	15-36		СН	A-7	i o	i 0				85-100		
	i i	36-80	Clay, silt	CL, CH	A-6, A-7	i o	i 0	100	100	90-100	70-95	40-65	20-40
	i		loam, silty				İ			İ		i	
			clay loam	į		į						į	
Strandquist		0-8	  Loam	CL-ML, CL,	  A-4, A-6	0	0-3	  95-100	  95-100	  75-90	  45-70	  20-40	   5-20
-	i i		İ	SC, SC-SM	İ	į	İ	i	į	İ	i	į	i
	i i	8-35	gravelly sand,	SP, GP, GP-	A-1	j 0	2-5	35-75	15-55	5-40	0-10	0-20	NP-3
	i i		gravelly	GM, SP-SM	İ	i	İ	į	İ	İ	į	į	į
	İ		coarse sand,			ĺ	ĺ	İ	İ	İ	İ	ĺ	İ
			very gravelly										
			sand										
		35-80	Silty clay	CL-ML, CL,	A-4, A-6	0-1	1-5	95-100	80-100	65-90	35-80	20-40	5-20
			loam, loam,	SC, SC-SM									
			sandy loam									ļ	
645:	 		 	 		l I		 			 	 	
Espelie	85	0-10	Fine sandy loam	ML, SM, SC	A-2, A-4	0	0	95-100	85-100	60-85	30-65	15-25	NP-8
	İ	10-27	Loamy sand,	SM, SP-SM	A-2, A-4	0	0-2	85-100	60-100	30-80	10-40	10-20	NP-4
	İ		loamy fine	ĺ		ĺ	ĺ	İ	İ	ĺ	İ	ĺ	İ
	İ		sand, fine	ĺ		ĺ	ĺ	İ	İ	ĺ	İ	ĺ	İ
	İ		sand	ĺ		ĺ	ĺ	İ	İ	ĺ	İ	ĺ	İ
	İ	27-80	Clay, silty	CH, CL	A-7	0	0	90-100	85-100	80-100	70-100	40-65	20-40
	į į		clay, clay	İ	İ	j	İ	į	İ	İ	į	į	İ
			loam		İ	į	į	İ		İ	İ		
Grano	   5	0-11	  Loam	CL-ML, SC-SM	  A-4, A-6	0	0	  95-100	  90-97	  65-85	  45-65	  20-35	   5-15
	i i	11-41	Silty clay	CL, CH	A-7	0	0	95-100	90-97	80-95	70-95	40-80	20-50
	i i		loam, silty	İ	İ	i	İ	į	İ	İ	į	į	į
	i i		clay, clay	İ	İ	i	İ	į	İ	İ	į	į	į
	į i	41-80		CH, CL	A-7	0	0	95-100	90-100	80-97	75-95	40-80	20-50
	į i		clay, silty	İ	İ	i	İ	i	İ	İ	i	į	i
	i		clay loam,	İ	į	i	İ	i	i	İ	i	i	i
	i		stratified	İ	į	i	İ	i	i	İ	i	i	i
	i		silt loam to	İ	į	i	İ	i	i	İ	i	i	i
	i		clay	İ	i	i	İ	i	İ	İ	i	i	i
	i		<u> </u>	İ	į	i	İ	i	i	İ	i	i	i

Map symbol	Percent	   Depth	USDA texture	Classif	ication	i	ments		rcentag	e passi: umber	ng	  Liquid	
and component name	of     map unit			   Unified	AASHTO	>10  inches	3-10 inches		10	40	200	limit 	index
	<u> </u>	In	1	<u>'</u>	1	Pct	Pct	İ	<u> </u>	i	İ	Pct	İ
	j j		İ	İ	İ	į	į	į	į	į	į	į	į
645:													
Hilaire	5	0-13	Fine sandy loam	SM, SC, CL,   ML	A-4, A-2	0 	0 	90-100 	75-100 	50-85 	30-55 	15-25 	NP - 8 
		13-33   	Loamy sand,   loamy fine   sand, sand	SP-SM, SM   	A-1, A-2, A-4   	0   	0-2   	85-100   	75-100   	45-85   	10-40   	15-20   	NP - 4   
		33-80	Clay, silty   clay, silty   clay loam	CH, CL	<b>A-7</b>   	0   	0   	95-100   	85-100   	75-95   	65-90   	40-70   	20-45
Wildwood	   5	   0-12	Muck	  PT	  A-8	0	l I 0		 				
		12-33	Clay, silty   clay, silty   clay loam	CH	A-7 	0	0	   100 	   100 	  95-100 	  85-98 	  75-90 	  50-65 
		33-80	Clay silty   clay	   CH 	A-7 	0	0	100	  85-100 	  85-100 	60-95	65-90	40-65
651:				 			 	 	! 	 			
Thiefriver	85	0-10	Fine sandy loam	ML, SM	A-4	0	0	95-100	80-100	70-90	35-55	15-30	NP-10
		10-16   	Loamy fine   sand, fine   sandy loam,   loamy sand	ML, SM, SC-   SM, CL-ML   	A-2, A-4   	0     	0   	95-100     	80-100     	60-90     	10-55     	15-30     	NP-10     
		16-35   	Fine sand,   loamy fine   sand, loamy   sand	SM, SP-SM   	A-3, A-2   	0   	0-2   	90-100     	80-100   	50-80     	5-35     	     	NP     
		35-80	Clay, silty   clay, silty   clay loam	CL, CH   	A-7   	0   	0   	100   	95-100   	95-100     	90-100     	40-70   	20-40
Grano	5	0-11	Loam	CL-ML, SC-SM	A-4, A-6	0	0	95-100	90-97	65-85	45-65	20-35	5-15
		11-41 	Silty clay   loam, silty   clay, clay	CL, CH	A-7	0	0				70-95		20-50
			Clay, clay	CH, CL	A-7	0	0	95-100	90-100	1	75-95	40-80	

clay, silty clay loam, stratified silt loam to clay

Table 23.--Engineering Index Properties--Continued

Table 23.--Engineering Index Properties--Continued

Map symbol and	Percent of	   Depth	USDA texture	Classi	fication	Fragi	ments 		rcentago sieve n	_	ng		   Plas-  ticity
and component name	or map unit			   Unified	AASHTO	1	3-10  inches	   4	10	40	200	limir	ticity  index
Component name	Map unic	In	]		AABIIIO	Pct	Pct	-	10	10	200	Pct	Index
651:				 				 			 		
Huot	5	0-14	Fine sandy loam	SC-SM, SM	A-4	0	0	90-100	75-100	50-85	25-55	15-30	NP-8
		14-26   	Loamy fine   sand, fine   sandy loam	SM, SC-SM   	A-2, A-4 	0	0   	90-100   	75-100   	60-85   	25-55   	15-30   	NP - 8   
		26-34 	Loamy fine sand, fine sand	SP-SM, SM 	A-2 	0	0   	90-100   	75-100   	50-80   	10-35   	0-20	NP 
		34-80	Clay, silty clay, silty clay loam	CH   	A-7 	0   	0-1   	95-100   	85-100   	85-100   	70-95   	60-80	35-50   
Wildwood	l   5	   0-12	Muck	  PT	  A-8	0	0	 	 	 	l I		
		12-33	Clay, silty clay, silty clay loam	   СН 	A-7	0	0	   100 	   100 	  95-100 	  85-98   	75-90	  50-65   
		33-80	Clay, silty   clay	   СН 	A-7	0	   0 	   100 	  85-100 	  85-100 	  60-95 	65-90	  40-65 
708:						İ		İ	İ	İ	İ		İ
Rushlake	85	0 - 8	Loamy sand	SP-SM, SM	A-1-b, A-2-4	0	1		75-100				NP
		8-80   	gravelly sand,   gravelly loamy   sand, sand	!	A-1-b, A-3   	0   	0-10   	55-95     	50-90     	15-60     	2-10   		NP     
Corliss	6	0-8	Loamy sand	SM, SP-SM	A-1-b, A-2-4	0	0-5	85-100	80-100	40-70	10-25	15-21	NP-4
		8-80 	Stratified very   gravelly sand   to sand	SP   	A-1-b	0   	0-5	75-95   	25-85   	10-60   	1-15   	0-0	NP   
Redby	5	0-3	Loamy fine sand	  SM	A-2, A-3	0	0	100	  95-100	  85-95	5-25	0-20	  NP-3
	İ	3-28	Fine sand, sand	SW-SM, SM	A-2, A-3	0	0	100	95-100	80-95	5-35	0-20	NP-3
		28-80	Fine sand, sand	SP, SP-SM	A-2, A-3	0	0	100	95-100	80-95	2-12	0-14	NP
Hangaard	3	0-12	Sandy loam	SM	A-2, A-4	0	0-3	95-100	80-100	  50-75	20-45		NP
		12-80	Stratified gravelly coarse sand, gravelly sand, coarse sand	SP-SM, SP     	A-1, A-2, A-3   	0   0	0-3	70-95     	55-90     	30-60	0-10     	       	NP     
Pits, gravel	1	 		 				 	 	 	 		

Table 23.--Engineering Index Properties--Continued

Map symbol	Percent	   Depth	USDA texture	Classif:	ication	Fragi	ments		rcentage sieve n	_	ng	  Liquid	   Plas-
and component name	of map unit			Unified	AASHTO	>10	3-10	   4	10	40	200	limit	ticity
Component name	map unit	In	<u> </u>		AASHIO	Pct	Pct	=	<u>10</u> 	<del>1</del> 0	200	   Pct	Index
			į	ĺ		į	į	į	į	į	į	į	į
712: Rosewood	   85	   0-11	  Fine sandy loam	  sc.sm.sc-sm	   A-2. A-4	   0	   0	   100	   97-100	  65-90	30-50	  15-30	  NP-10
		11-19   	Fine sandy   loam, loamy   fine sand,   sandy loam	SC, SC-SM, SM     		0     	0	100     	95-100     	  60-85     			NP-10   
			Fine sand, sand	•	A-1, A-2, A-3	0		85-100	!		5-25	5-15	NP
	   	65-80   	Fine sand,   sand, coarse   sand	SP-SM, SM   	A-1, A-2, A-3   	0   	0   	85-100   	75-95     	40-80     	5-35   	5-15   	NP   
Deerwood	6	0-14	Muck	  PT	A-8	0	0						
		14-16   	Fine sand,   loamy sand,   fine sandy   loam	SM, SP-SM     	A-2, A-4   	0   	0-5   	  95-100     	  90-100   	  50-75   	12-50     	0-20	NP-4   
		16-80	Fine sand,   sand, gravelly   sand		A-1, A-2, A-3   	0   	0-5   	75-100   	55-100   	  35-70   	1-25   	0-14	NP   
Hangaard	5	0-12	Sandy loam	  SM	A-2, A-4	0	0-3	95-100	80-100	50-75	20-45		NP
		12-80     	Stratified   gravelly   coarse sand,   gravelly sand,   coarse sand	SP-SM, SP         	A-1, A-2, A-3	0     	0-3	70-95       	55-90       	30-60	0-10       	       	NP       
Ulen	   4	   0-10	  Fine sandy loam	  SM.SC.SC-SM	   A-4	l I 0	l I 0	100	100	  80-100	35-50	0-25	  NP-8
			Loamy fine   sand, fine   sand	SM 	  A-2 	0	0	95-100	95-100	70-95   	12-35   	0-14	NP 
	İ	16-67	Fine sand	SM, SP-SM	A-2, A-3	0	0	100	95-100	80-100	5-35	0-14	NP
	   	67-80   	Very fine sandy   loam, fine   sandy loam	SM, ML, SC-   SM, CL-ML 	<b>A - 4</b>   	0   	0   	100   	95-100   	70-95     	35-60   	20-30	NP-10   
721B:				İ		! 	! 	i	! 	İ		i	İ
Corliss	85	0-8	Loamy sand	SP-SM, SM	A-1-b, A-2-4	0			1			15-21	NP-4
	   	8-80   	Stratified very   gravelly sand   to sand	SP   	A-1-b   	0   	0-5   	75-95     	25-85     	10-60     	1-15   	0-0	NP   
Rushlake	10	0-8	Loamy sand	SM, SP-SM	A-1-b, A-2-4	0	0	95-100	75-100	15-60	10-35		NP
		8-80	gravelly sand, gravelly loamy sand, sand	SP, SP-SM	A-1-b, A-3	0   	0-10   	55-95   	50-90   	15-60   	2-10	   	NP 

Table 23.--Engineering Index Properties--Continued

Map symbol	Percent	Depth	USDA texture	Classif	ication	İ	ments		rcentag	_	_		   Plas-
and	of			!		>10	3-10	<u> </u>				limit	ticity
component name	map unit		<u> </u>	Unified	AASHTO	<u> </u>	inches	4	10	40	200	<u> </u>	index
		In				Pct	Pct					Pct	
721B:						 		 	 	l I	İ		 
Hangaard	4	0-12	Sandy loam	SM	A-2, A-4	0	0-3	95-100	80-100	50-75	20-45	j	NP
		12-80	Stratified   gravelly   coarse sand,   gravelly sand,   coarse sand	SP, SP-SM       	A-1, A-2, A-3       	0     	0-3     	70-95       	55-90       	30-60       	0-10       	       	NP       
Pits, gravel	1			   	   	   	   	   	   				   
733:		0.00	  ac-ul-					 					
Berner	90	0-23	Muck  Sand, fine	PT  SP, SM, SP-SM	A-8  A-2 A-3	0   0	0 0 0	  90-100	   95_100		0-25	0-20	MD 3
			sand, loamy	SP, SM, SP-SM   	M-2, M-3   	<b>0</b>   	0-2   	90-100   	   		0-25	0-20	NP-3   
		41-80	Loam, fine   sandy loam,   silt loam	CL-ML, CL   	A-4, A-6   	0-1   	1-5     	95-100     	85-100     	60-90     	50-80   	20-40	5-20   
Grygla	5	0-6	Loamy fine sand	SM, SC-SM	A-2	0	0	100	100	85-95	15-35	15-25	NP-7
		6-26	Sand, fine   sand, loamy   fine sand	SM, SC-SM,	A-2, A-3 	0   	0-1 	95-100   	90-100   	70-95   	5-35	15-20	NP - 5 
		26-80	Loam, fine sandy loam, silt loam	CL, CL-ML   	A-4, A-6   	0-1 	0-5   	  95-100   	80-100   	70-85   	50-70	20-40	5-20   
Seelyeville	5	0-12	Muck	PT	A-8	0	0						
-		12-80	Muck, mucky   peat	PT	A-8 	0	0	   	   	   			   
737:						! 	 	 	! 	l			
Mahkonce	85	0-3	Fine sandy loam	SC, SC-SM,	A-4, A-6	0-1	0-3	95-100	90-98	65-85	45-65	25-35	5-15
		3-5	Fine sandy   loam, loam,   silt loam	CL, CL-ML 	A-4, A-6 	0 	0-3	95-100   	90-98   	65-90 	50-80	20-40	5-20
		5-16	Silty clay,   clay	   CH 	   A-7 	   0 	0-5	  95-100 	  90-98 	  75-95 	70-90	50-65	25-40
		16-23	Clay loam,   silty clay   loam, clay	  -   CL	A-6, A-7   	0   	0-5   	95-100   	95-98   	75-95   	60-90   	35-50	15-25   
	 	23-80	Loam, clay   loam, silty   clay loam	  -   CL	A-6, A-7   	0-1   	1-5   	95-100   	90-98   	75-95   	60-90   	35-50	15-25   

0-1 | 1-5 | 95-100 | 85-98 | 70-95 | 50-90 | 24-35 | 6-15

Map symbol and	Percent of	   Depth 	USDA texture	Classi 	fication	n	Frag	ments 		rcentago sieve n	-		  Liquid  limit	
component name	map unit	 		Unified	AAS	SHTO	1	inches	4	10	40	200		index
	-	In			İ		Pct	Pct					Pct	ļ
737:		 		 				 		 	 	 	 	 
Auganaush	10	0-5	Loam	CL-ML, CL	A-4,	<b>A-6</b>	0	0-3	95-100	85-95	85-95	60-90	20-40	5-15
		5-7   	Loam, fine   sandy loam,   silt loam	CL-ML, ML,   SC-SM, SM 	A-4 		0	0-3   	95-100   	85-95   	75-90   	40-70   	15-30   	NP-10   
		7-18   	Clay, clay   loam, silty   clay loam	CL, CH   	A-7		0	0-3	95-100   	  85-95   	  85-95   	70-90   	  45-70   	25-45   
		18-58   	Clay loam,   silty clay   loam, silty   clay	CH, CL     	A-6, 2	A-7	0-1	1-5   	95-100	85-95     	80-95   	60-90     	35-55     	15-30     
		58-80   	Loam, clay   loam, silty   clay loam	CL-ML, CL	A-6, 2	A-7	0-1	1-5   	90-100	85-95   	60-90   	55-85   	25-45   	5-20   
Eckvoll	5	0-6	Loamy fine sand	SM, SC-SM	A-2, A	A-4	0	0-2	90-100	85-100	45-80	25-40	15-20	  NP-7
		6-21   	Fine sand,   sand, loamy   fine sand	SM, SP-SM 	A-1, 2	A-2, A-3	0	0-2	90-100	85-100   	  45-75   	5-30 	  15-20 	NP-4
		21-26	Clay loam,   sandy clay   loam, loam	SC, CL	A-4,	A-6, A-7	0	0-5 	90-100	  85-98   	65-95 	45-75   	  25-50 	7-25
		26-80	Loam, clay   loam, fine   sandy loam	CL, CL-ML	A-4, i	A-6, A-7	0-1	1-5   	90-100	  85-98   	70-95   	50-80	  25-45   	5-20   
755:		 		 				 			 		 	[ 
Woodslake	85	0-8	Clay	MH, CH	A-7		0	0	100	98-100	90-100	85-98	50-65	20-35
İ		8-15	Clay	CH	A-7		0	0	95-100	95-100	90-100	85-100	60-85	35-50
		15-36		CH	A-7		0	0		95-100				
		İ	Clay, silt   loam, silty	CH, CL 	A-6, 1	A-7	0	0	100	100	90-100	70-95 	40-65 	20-40

Table 23.--Engineering Index Properties--Continued

| clay loam 8 Clay loam A-7 0 | 0-2 | 95-100 | 90-100 | 80-100 | 70-95 | 40-50 | 20-25 Boash-----0-9 CL 9-29 Clay, silty CH, CL A-7 0 | 0-2 | 95-100 | 90-100 | 80-100 | 70-95 | 45-80 | 25-50 clay loam, silty clay

A-4, A-6

29-80 Loam, sandy

loam

loam, silt

CL, CL-ML

Table 23.--Engineering Index Properties--Continued

Map symbol	Percent	Depth	USDA texture	Classi	fication	_i	ments		_	e passi	-	  Liquid	
and	of					>10	3-10		1	1 40		limit	ticity
component name	map unit		1	Unified	AASHTO		inches	4	10	40	200	<u> </u>	index
		In				Pct	Pct				 	Pct	 
755:				I		l I	 	l I	 	l I	l I	 	 
Wildwood	l 5	0-12	Muck	  PT	  A-8	0	0	 	 		 	l I	 
WII GWOOG			Clay, silty	CH	A-7	0	0	100	100	95-100	  85-98	  75-90	  50-65
			clay, silty		i	i	i	i	ĺ		İ		İ
			clay loam	İ	j	j	į	į	į	İ	į	į	į
		33-80	Clay, silty	CH	A-7	0	0	100	85-100	85-100	60-95	65-90	40-65
			clay										
_													
Dora	2	0-5 5-31	Muck	PT PT	A-8	0   0	0   0	 	 		 	 	 
			Silty clay	CH, CL	A-8  A-7	0	0	100	100	1	90-100	ı	1
		31-00	loam, silty	CH, CH	A - 7	0	0	100	100 	30-100	30-100	43-80	33-30
			clay, clay	i		i	i	i	! 		! 	! 	! 
				İ	j	i	i	İ	İ	İ	İ	İ	İ
767:				İ	İ	İ	ĺ	ĺ	ĺ		ĺ		ĺ
Auganaush	90		Loam	CL, CL-ML	A-4, A-6	0				85-95			5-15
		5-7	Loam, fine	SM, ML, CL-	A-4	0	0-3	95-100	85-95	75-90	40-70	15-30	NP-10
			sandy loam,	ML, SC-SM									
		7 10	silt loam  Clay, clay	CH, CL	  A-7	0	   0-3			  85-95			
		/-18	loam, silty	CH, CL	A- /	0	0-3	  95-100	85-95 	85-95	70-90 	45-70 	45-45 
			clay loam	1		i	 	l I	 	l I	l I	 	 
		18-58	Clay loam,	CH, CL	A-6, A-7	0-1	1-5	95-100	85-95	80-95	60-90	35-55	15-30
			silty clay	İ	j	i	İ	į	į	İ	į	İ	į
			loam, silty										
			clay										
		58-80	Loam, clay	CL, CL-ML	A-6, A-7	0-1	1-5	90-100	85-95	60-90	55-85	25-45	5-20
			loam, silty										
			clay loam	1		-		 	l I	l I	l I	l I	 
Mustinka	5	0-9	Clay loam	CL, CH	  A-7	0	0	100	100	90-100	  70-95	  40-52	20-30
	-		Silty clay,	CL, CH	A-7	0	0	100	100		75-95		
			silty clay	İ	j	i	İ	į	į	İ	į	İ	į
			loam, clay	İ	į	İ	İ	ĺ	ĺ	İ	ĺ		ĺ
		35-62	Silty clay	CL	A-6, A-7	0	0	100	95-100	85-100	70-95	31-47	12-25
			loam, clay	!		[		[					
			1										
		62-80		   CP	A-6, A-7	0-1	1-5	  35-T00	85-98 	/5-95 	50-90 	31-47 	12-25 
				1		1		 	l I	1	l I	l I	 
			loam, clay	  CL     	  A-6, A-7      A-6, A-7	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	     	   	   	  85-100        75-95   	   	   	   

				Classif	ication	Fragi	ments		_	e passi	ng		
Map symbol	Percent	Depth	USDA texture	ļ				1	sieve n	umber		Liquid	
and	of					>10	3-10					limit	
component name	map unit		l	Unified	AASHTO		inches	4	10	40	200		index
		In	!			Pct	Pct				!	Pct	
											!		
767:			1 •										
Wildwood	3	0-12	1	PT	A-8	0	0						
		12-33	Clay, silty	CH	A-7	0	0	100	100	95-100	85-98	75-90	50-65
			clay, silty clay loam	 			 	 	 	 			
		33-00		  CH	  A-7	0	l I 0	100	   05_100	   05_100	   60_05	  65-90	140-65
		33-60	clay, silty	CH	A- /	0	0	100	63-100	  03-100	60-95	65-30	140-65
			Clay	 	1	 	l I	 	l I	l I	 	1	I I
Mahkonce		0-3	  Fine sandy loam	SC CIMI.	A-4, A-6	0-1	0-3	   95-100	   90-98	  65-85	  45-65	25-35	5-15
Mamionec	- 1	0 5		SC-SM	1, 1, 1	0 =	0 3	55 100	50 50	03 03	13 03	23 33	3 13
	i	3-5	Fine sandy	CL, CL-ML	A-4, A-6	0	0-3	95-100	90-98	65-90	50-80	20-40	5-20
	i		loam, loam,			i		İ			i		i
	i		silt loam		İ	i	İ	İ	İ	İ	İ	İ	i
	i	5-16	Silty clay,	CH	A-7	0	0-5	95-100	90-98	75-95	70-90	50-65	25-40
	ĺ		clay		İ	İ	ĺ	ĺ	ĺ	ĺ	ĺ	İ	İ
		16-23	Clay loam,	CL	A-6, A-7	0	0-5	95-100	95-98	75-95	60-90	35-50	15-25
			silty clay										
			loam, clay										
		23-80	Loam, clay	CL	A-6, A-7	0-1	1-5	95-100	90-98	75-95	60-90	35-50	15-25
			loam, silty										
			clay loam								!		
											!	!	
794:													
Clearriver	85	0-2	Loamy fine sand		A-2	0		95-100					NP-10
		2-21	Sand, loamy   sand	SP-SM, SM	A-2, A-3	0	0	95-100	85-100	55-90	5-35		NP
		21 00	sand  Stratified fine	CD CM CD	  A-1, A-2, A-3	0	0-2	  75-100	   65 05	  40 6E	0-10		   NP
		21-80	sand to	SP-SM, SP	A-1, A-2, A-3	0	U-Z	/5-100 	65-85	40-65 	0-10		NP
			gravelly	 	1	 	 	l I	 	 	 	1	I I
			coarse sand	 		 	 	l I	 	 	i	İ	i i
	i			! 				! 	! 		İ		İ
Hiwood	7	0-3	Fine sand	SM, SC-SM	A-2, A-3	0	0	100	95-100	80-95	5-25		NP
	i	3-22	Sand, fine	SM, SC-SM	A-2, A-3	0	0	100	95-100	80-95	5-20		NP
	i		sand, loamy	İ	İ	į	į	į	İ	į	i	i	i
	j		sand	İ	İ	į	į	j	İ	į	İ	į	İ
	ĺ	22-80	Sand, fine sand	SP, SP-SM	A-2, A-3	0	0	100	95-100	80-95	1-12		NP
j	İ		İ	ĺ	İ	İ	ĺ	ĺ	ĺ	ĺ	ĺ	İ	İ
Meehan	5	0 - 8	Loamy sand	SM	A-1, A-2	0	0	90-100	75-100	40-90	15-30	0-14	NP
		8-31		SM, SP-SM, SP	A-1, A-2, A-3	0	0	90-100	75-100	40-90	3-30	0-14	NP
			sand, loamy								[		
			coarse sand								[	[	
		31-80		SP, SP-SM	A-1, A-2, A-3	0	0	90-100	75-100	40-90	0-5	0-14	NP
			sand										

Table 23.--Engineering Index Properties--Continued

Table 23.--Engineering Index Properties--Continued

Map symbol	Percent	Depth	USDA texture	Classif	ication	i	ments		rcentag	_	ng		   Plas-
and component name	of map unit		 	Unified	AASHTO	>10  inches	3-10 inches		10	40	200	limit	ticity
- COMPONENT HAME	map anic	In	1	01111104		Pct	Pct	<u>-</u>	10	10	200	Pct	
į	İ		İ	İ	j	İ	İ	į	į	į	İ	İ	İ
794:													
Faunce	3	0-2 2-14	Loamy fine sand  Sand, fine   sand, loamy   sand	SM, SP-SM  SM, SP-SM 	A-2  A-2, A-3 	0   0 	0   0 		80-100  80-100 		10-35   0-20 	   0-20 	NP  NP-3 
		14-24	gravelly loamy coarse sand, sand, gravelly	İ	A-2, A-3 	0	0-2	95-100   	65-100   	55-80   	0-20	0-20	NP-3 
		24-80	sandy loam Stratified coarse sand to gravelly sand	  SP-SM, SP   	  A-1, A-2, A-3   	   0-1 	   0-2   	  75-90   	  50-85   	  40-65   	   0-10   	     	   NP   
1002:				 		 	 	 	l İ	 			
Fluvaquents, frequently			i I	 	 	 	 	j I	j I	j I	İ İ		i I
flooded	90		Fine sandy loam	!	A-2-4, A-4	0	0	100	1	50-85			NP-10
		12-80	Stratified   loamy sand to   silt loam	CL, SM, SC,   ML 	A-1, A-3,   A-4, A-6 	0   	0   	95-100   	70-100   	35-95   	5-80   	0-40	NP-15   
Seelyeville	6	0-18	Muck	   PT	  A-8	   0	l l 0	 		 			
		18-80	Mucky peat,	PT	A-8	0	0	 	 	 	 		 
Hapludalfs	2	0-6	  Fine sandy loam	SC-SM, CL-ML	   A-4	   0	0-3	  95-100	  85-100	  70-85	35-55	20-30	5-10
-		6-8	Fine sand,   loamy fine   sand, fine   sandy loam	SM, ML	A-2, A-4   	0	0-3	  95-100   	85-100   	70-90     	30-50	  15-25   	NP - 5     
		8-25	Loam, clay   loam, silty   clay loam	CL, CL-ML	A-6 	0	0-5	95-100	85-100	85-100 	50-95	25-40	5-20
		25-80	Fine sandy   loam, loam,   silt loam	CL-ML, CL, SC	A-4, A-6 	0-1	0-5	95-100   	85-100   	70-100   	35-90	20-35	5-15   
Water	2		 	   	   	   	   	   	   	   			
1030:	İ		İ	j	j	İ	j	İ	İ	İ	İ	į	İ
Pits, gravel	75												
Udipsamments	20	0-14 14-60	  Sand  Sand, fine sand	  SP-SM, SM  SW-SM, SM	  A-2  A-2, A-3	   0   0	   0   0		  85-100  85-100		  10-35   5-25	0-20	   NP  NP-3
		60-80	·	SP-SM, SP,   SW-SM	A-1, A-2	0	0		65-85		0-10	1	NP - 3 

Map symbol	Percent	Depth	USDA texture	Classif	ication	i	ments		rcentage sieve n	e passi: umber	ng	Liquid	
and component name	of map unit		Ī	Unified	AASHTO	>10	3-10 inches	4	10	40	200	limit	ticity  index
	Map anic	In	]			Pct	Pct	-				Pct	
1030:				 	 				 				
Corliss	2	0-8 8-80	Loamy sand  Stratified very   gravelly sand   to sand	SM, SP-SM	A-1-b, A-2-4  A-1-b 	0   0   	0-5 0-5 		80-100  25-85   		10-25   1-15 	15-21   0-0 	NP-4   NP 
Karlstad	2	0 - 7	Loamy sand	SM, SP-SM	  A-2, A-3	0-5	0-5	95-100	95-100	75-95	5-35	15-25	NP-4
		7-10	Coarse sandy   loam, sandy   loam, fine   sandy loam	SC, SC-SM, SM	!	0-5   	0-5     	95-100     	95-100     	75-95     	12-50     	15-25     	NP-10   
		10-14	gravelly coarse   sandy loam,   gravelly sandy   loam, gravelly   fine sandy   loam	SM, SC	A-1, A-2       	0-5	0-25	65-95       	50-75       	25-50	10-30	15-25       	NP-10         
		14-80	Stratified gravelly coarse sand to loamy fine sand	SP-SM, SP     	A-1, A-2     	0-5     	0-25       	60-100       	35-100     	20-80	0-55	0-20	NP - 3     
Hangaard	1		  Sandy loam  Stratified   gravelly   coarse sand,   gravelly sand,   coarse sand	  SM  SP-SM, SP       	  A-2, A-4  A-1, A-2, A-3   	0 0	0-3	95-100   70-95   	1		20-45   0-10 	       	NP   NP 
1031:				 	 		 		 				
Seelyeville,	l i		İ	ĺ	ĺ	İ	İ	İ	İ	İ	İ	İ	İ
ponded	90   		Muck  Mucky peat,   muck	PT   PT 	A-8  A-8 	0   0	0   0 		   	   			   
Cathro	   0 to 10	0 - 8	  Muck	  PT	   A-8	0	   0		 				
		8-40 40-80	Muck  Sandy loam,   loam, clay   loam	PT  CL, CL-ML,   SC, SC-SM	A-8  A-4, A-6 	0   0-1 	0   0-5 	  85-100   	  75-100 	  60-100 	  35-90 	  20-40 	   5-20 
Dora	0 to 10		  Muck  Muck  Silty clay   loam, silty	  PT  PT  CH, CL 	  A-8  A-8  A-7	   0   0   0	   0   0   0	       100	       100	      90-100 	      90-100	      45-80	      35-50

Table 23.--Engineering Index Properties--Continued

Table 23.--Engineering Index Properties--Continued

Map symbol	   Percent	Depth	USDA texture	Classif	ication 	Fragi	ments		rcentage sieve n	_	ng	  Liquid	   Plas
and	of				!	>10	3-10	ļ				limit	ticity
component name	map unit			Unified	AASHTO		inches	4	10	40	200	<u> </u>	index
	 	In		 	 	Pct	Pct	 	 	 	 	Pct	
1031:							İ	İ	! 	İ	İ		İ
Markey	0 to 10		Muck		A-8	0	0						
	     	42-80	Fine sand,   loamy sand,   coarse sand	SM, SP, SP-SM   	A-2, A-3   	0   	0   	100   	75-100   	60-75     	0-20   		NP   
1067:	 			 									
Fluvaquents,	į į		İ	İ	İ	İ	İ	İ	İ	İ	Ì	İ	İ
frequently											[		
flooded	60		Fine sandy loam  Stratified		A-2-4, A-4 A-1, A-3,	0	0   0		90-100 70-100		20-55		NP-10 NP-15
		11-00	loamy sand to   silt loam	CL, SM, SC,   ML 	A-4, A-6		0   	95-100   	70-100   	33-33	5-60	0-40	NP-15   
Hapludalfs	   30	0-6	  Fine sandy loam	CL-ML, SC-SM	   A-4	0	0-3	  95-100	  85-100	  70-85	  35-55	20-30	5-10
	İ	6-8	Fine sand,	ML, SM	A-2, A-4	0			85-100			1	NP-5
	 		loamy fine sand, fine sandy loam	 	   		 	   	   	 	 	   	   
		8-25	Loam, clay  loam, silty   clay loam	CL, CL-ML	A-6 	0	0-5	95-100	85-100	  85-100 	50-95	25-40	5-20
		25-80	Fine sandy   loam, loam,   silt loam	  CL-ML, CL, SC   	  A-4, A-6 	0-1	   0-5   	  95-100   	  85-100   	  70-100   	  35-90   	20-35	   5-15   
Seelyeville	   5	0-18	Muck	   PT	  A-8	0	   0	 	 	 	 		
5001,001110			Mucky peat,   muck	  PT 	A-8 	0	0	   	   	   	   		
Water	   5			 			 		 	 			
1133B:	i i												
Skime	85       	0-6 6-17	Loamy fine sand  Loamy fine   sand, fine   sand, loamy   sand	SC-SM, SM SM, SC-SM	A-2  A-2 	0 0	0 0	1	95-100		15-35  15-35 	0-20	NP - 5   NP - 5 
		17-22	Fine sandy   loam, sandy	  SC, SC-SM 	  A-2, A-4 	0	0	100	   100 	  60-85 	30-50	20-30	5-10
		22-72	loam  Sand, fine sand	  gp_gwr_gwr	  A-2, A-3	0	   0	100	   100	  50-80	   5-35	0-0	   NP
			Stratified fine   sand to very   fine sandy   loam to silt   loam			0	0   0 	100   100   	100   100   			15-30	

Table 23.--Engineering Index Properties--Continued

Map symbol	   Percent	Depth	USDA texture	Classif	ication	Fragi	ments	Pe	ercentag	-	ng	  Liquid	   Plas-
and	of	-	İ			>10	3-10					limit	
component name	map unit		İ	Unified	AASHTO	inches	inches	4	10	40	200	İ	index
		In				Pct	Pct					Pct	
1133B:			İ				i i				İ	İ	
Hiwood	10	0-3	Fine sand	SC-SM, SM	A-2, A-3	0	0	100	95-100	80-95	5-25		NP
	 	3-22	Sand, fine   sand, loamy   sand	SC-SM, SM   	A-2, A-3 	0   	0   	100	95-100   	80-95   	5-20   	   	NP 
	į	22-80	Sand, fine sand	SP-SM, SP	A-2, A-3	0	0	100	95-100	80-95	1-12		NP
Zippel	   5   	0-10	  Very fine sandy   loam	  ML, CL-ML 	   A-4 	0		100	95-100	  85-100 	  50-75 	15-25	  NP-5 
		10-16	Very fine sand,   very fine   sandy loam,   loamy very   fine sand	CL-ML, ML       	A-4     	0	0	100	95-100	85-100       	50-95     	15-25       	NP-5     
		16-80	Stratified silt   loam to very   fine sand	ML, CL-ML   	A-4   	0	0   	100	95-100	85-100     	50-95   	15-25   	NP - 5   
1134:	i i		İ	İ	İ	i	i i			İ	İ	İ	İ
Borup	55	0-9	Loam	ML	A-4	0	0	100	100	95-100	70-95	20-34	NP-7
	 	9-34	Very fine sandy   loam, silt   loam	ML   	A-4   	0   	0       	100	100   	90-100   	60-95   	0-30	NP - 5   
		34-80	Loamy very fine   sand, very   fine sand,   very fine   sandy loam	ML         	A - 4       	0       	0   	100	100       	85-100         	50-90       	0-30       	NP-5       
Glyndon	   35   	0-7	  Very fine sandy   loam	ML 	A-4 	0	   0   	100	100	  95-100 	70-95	20-30	NP-5 
		7-80	Silt loam, very   fine sandy   loam, loam	CL-ML, CL, ML	<b>A-4</b>   	0	0       	100	100     	90-100     	85-95   	20-30	NP-10   

Table 23.--Engineering Index Properties--Continued

Map symbol	Percent	Depth	USDA texture	Classif	ication	Fragi	ments		rcentag	e passi: umber	ng	  Liquid	   Plas-
and	of				!	>10	3-10		1		1	limit	-
component name	map unit		<u> </u>	Unified	AASHTO		inches	4	10	40	200	<u> </u>	index
		In				Pct	Pct					Pct	
1134:				 	 	l I	 	 	l I	 	l I	l I	 
Augsburg,				 	I I	İ	 	 	l I		l I	 	l İ
depressional	5	0-9	Mucky very fine	OL. ML. CL-	A-4, A-6	0	0	100	100	95-100	50-90	15-40	NP-15
			sandy loam	ML, CL			-						
	i i	9-16	Loam, very fine	ML, CL-ML, CL	A-4	0	0	100	100	95-100	80-90	15-35	NP-10
	į į		sandy loam,	İ	j	j	İ	j	İ	į	İ	j	j
			silt loam										
		16-32	Loamy very fine	CL, CL-ML, ML	A-4	0	0	100	100	95-100	80-90	15-35	NP-10
			sand, very										
			fine sandy			ļ			!	!	!		
			loam, loam										
		32-80	Silty clay,	CH	A-7	0	0	95-100	95-100	95-100	95-100	50-80	35-55
			clay, silty clay loam	ļ I	l I		 	 				 	 
			Clay Idam	 	 	l I	 	 	 	 	 	 	 
Skime	   5	0-6	Loamy fine sand	SC-SM. SM	  A-2	0	l l 0	100	  95-100	  65-90	  15-35	0-20	  NP-5
			Fine sand,	SM, SC-SM	A-2	0		95-100				0-20	
	i		loamy sand,		İ	ì		ĺ	i		i		İ
	i i		loamy fine	İ	İ	i	İ	į	i	i	i	İ	j
	İ		sand		ĺ	İ	ĺ	ĺ	ĺ	İ	ĺ	ĺ	ĺ
		17-22	Fine sandy	SC-SM, SC	A-2, A-4	0	0	100	100	60-85	30-50	20-30	5-10
			loam, sandy										
			loam										
			Fine sand, sand		A-2, A-3	0	0	100	100	50-80	5-35	0-0	NP
		72-80	Stratified fine	•	A-2, A-4	0	0	100	100	65-95	15-85	15-30	NP-10
			sand to very fine sandy	CL-ML	 		  -					 	 
			loam to silt	 	l I	l I	 	 	l I		l I	 	l I
			loam	 	I I	İ	 	 	l I		l I	 	l İ
					i	i	! 		<u> </u>	i	<u> </u>	! 	! 
1144:	i i				İ	i	İ	İ	İ	i	İ	İ	İ
Strathcona,	İ				ĺ	İ	ĺ	ĺ	ĺ	İ	ĺ	ĺ	ĺ
depressional	0 to 90	0-12	Mucky fine	SM, SC-SM	A-4	0	0	100	95-100	65-85	30-50	0-25	NP-10
			sandy loam										
		12-18	Fine sandy	SC-SM, SM	A-2, A-4	0	0-2	100	95-100	65-85	15-50	20-30	NP-10
			loam, sandy										
		10 20	loam  Sand, fine	an an an	  A-2	0	   0-2	  95-100			110 20	   0-14	   NP
		18-39	sand, loamy	SP-SM, SM	A-2 	0	U-Z	  95-100	  82-T00	60-80	10-30	0-14	NP
			fine sand	 	 		 	 	 		 	 	l I
		39-80	Fine sandy	CL, CL-ML	  A-4, A-6	0-1	1-5	95-100	85-98	70-90	50-70	25-40	   5-20
	i		loam, loam,			İ		İ	İ	İ	į	į	
	į i		clay loam	İ	İ	j		İ	į	į	į	İ	İ
	ı İ								1		1		

Table 23.--Engineering Index Properties--Continued

Map symbol	Percent   of	Depth	   USDA texture	Classif	ication	Frag	ments		rcentag	_	-	  Liquid	   Plas-  ticity
component name	map unit			Unified	AASHTO	1	inches	4	10	40	200		index
		In	]			Pct	Pct					Pct	
1144:									 	 			
Kratka,													
depressional	0 to 90	0-9	Mucky fine sandy loam	SM, SC-SM	A-2-4, A-4	0	0	95-100	90-100	50-80	20-50	0-25	NP-5
	 	9-26	Loamy sand,   loamy fine   sand, sand	SM, SP-SM,   SW-SM 	A-2, A-3   	0   	0-2   	95-100   	90-100   	50-80   	5-35   	0-20   	NP-3   
	 	26-80	Loam, clay   loam, sandy   loam	SC-SM, CL,   SC, CL-ML 	A-4, A-6   	0-1	1-5   	95-100   	90-100   	70-90   	40-60   	20-45	5-20   
Kratka		0-8	  Fine sandy loam	SC-SM, SM	  A-4	0	0	95-100	  90-100	50-80	36-50	15-25	2-6
		8-22		SP-SM, SW-SM	A-2, A-3 	0	0	95-100	,				NP-3 
		22-80	Loam, clay loam	CL, CL-ML,	A-4, A-6	0-1	   1-5 	95-100	  90-100 	75-90	50-75	25-40	5-20
Northwood	5	0-11	Muck	  PT	  A-8	0	0		 	 			
		11-16	Fine sandy   loam, loamy   fine sand,   loamy sand	SM, SC-SM     	A-2, A-4   	0   	0-3   	95-100     	  90-100   	  51-85     	15-50   	0-35	NP-10   
	 	16-25	Coarse sand,   fine sand,   loamy fine   sand	SM, SP-SM     	A-3, A-2   	0   	0-3   	95-100     	80-100     	70-95     	5-35   	0-14   	NP   
	 	25-80	Loam, clay loam, fine sandy loam	ML, CL, CL-ML	A-4, A-6   	0-1	1-5     	95-100	90-100     	75-100     	50-80   	20-40	3-20

Table 23.--Engineering Index Properties--Continued

Map symbol	   Percent	Depth	USDA texture	 	Classif	icati	on	Fragi	ments		rcentage sieve n	_	ng	  Liquid	   Plas-
and	of	ĺ						>10	3-10	İ				limit	ticity
component name	map unit	ĺ		į ·	Unified	A	ASHTO	inches	inches	4	10	40	200	İ	index
		In						Pct	Pct					Pct	
1154:	 	 				 		-	 	 	 	 	 	 	 
Sax	90	0-15	Muck	PT		A-8		0	0		i		i		
	i	15-24	Mucky silt	CL,	CL-ML	A-4,	A-6	0	0	100	100	90-100	60-85	20-40	5-15
	İ	İ	loam, silt	į		İ		j	į	į	İ	į	İ	į	į
	ĺ	ĺ	loam, silty	ĺ		ĺ		Ì	İ	ĺ	ĺ	ĺ	ĺ	İ	ĺ
	ĺ	ĺ	clay loam	ĺ		ĺ		Ì	İ	ĺ	ĺ	ĺ	ĺ	İ	ĺ
		24-39	Silt loam,	CL,	CL-ML	A-4,	A-6	0	0	100	100	90-100	60-85	20-40	5-15
			silty clay												
			loam												
		39-71	Silt loam,	ML,	CL-ML, CL	A-4,	A-6	0	0	100	100	90-100	50-90	16-40	NP-15
			silty clay												
	!		loam, very			!		ļ			!		!		!
	!		fine sandy	!		!		ļ			!		!		!
			loam	!											
		71-80	Silty clay	CH,	CL	A-7		0	0	100	100	90-100	75-95	40-80	15-50
		 	loam, silty					1							
	1	 	clay, clay			 				 	l I	 			 
Wabanica	5	   0-8	Silt loam	CL,	CL-ML	  A-4,	A-6	0	0	100	  95-100	  95-100	  60-90	  25-35	5-15
	İ	8-19	Silt loam,	CL,	CL-ML	A-4,	A-6	0	0	100	95-100	85-100	60-95	25-40	5-15
	ĺ	ĺ	silty clay	ĺ		ĺ		Ì	İ	ĺ	ĺ	ĺ	ĺ	İ	ĺ
			loam												
		19-80	Silt loam,	CL,	CL-ML	A-4,	A-6	0	0	100	95-100	85-100	60-95	25-40	5-15
			silty clay												
			loam												
Cathro	3	   0-8	Muck	PT		  A-8		0	0	 	 	 	 	 	 
	İ	8-40	Muck	PT		A-8		0	0		i	i	i		
	İ	40-80	Sandy loam,	CL,	CL-ML,	A-4,	A-6	0-1	0-5	85-100	75-100	60-100	35-90	20-40	5-20
	ĺ	ĺ	loam, clay	SC	, SC-SM	ĺ		Ì	İ	ĺ	ĺ	ĺ	ĺ	İ	ĺ
			loam					Ţ		ļ	[	ļ	ļ		
Woodslake	   2	   0-8	Clay	CH,	МН	  A-7		0	   0	   100	  98-100	  90-100	  85-98	  50-65	  20-35
	i		Clay	CH		A-7		0	0		95-100				
	į	15-36	Clay	СН		A-7		0	0	95-100	95-100	90-100	85-100	60-85	35-50
	j	36-80	Clay, silt	CH,	CL	A-6,	A-7	0	0	100				40-65	
			loam, silty								[		1		
			clay loam												
	         	15-36	Clay  Clay, silt   loam, silty	CH		A-7	A-7	0	0	95-100	95-100	90-100	85-100	60-85	

Table 23.--Engineering Index Properties--Continued

Map symbol	Percent	Depth	USDA texture	Classif	ication	Frag	ments		rcentage sieve n	_	-	  Liquid	Plas-
and	of					>10	3-10	ļ				limit	-
component name	map unit			Unified	AASHTO		inches	4	10	40	200		index
		In			 	Pct 	Pct 	 	 	 		Pct 	
1158:													
Skagen	85	0-9	Loam	ML, CL, CL-ML	1	0-1	0-3		85-100			20-30	
			Loam, fine   sandy loam,   sandy loam	CL-ML, SC-SM   	A-4   	0-2	1-5   	j 	85-98   		 	20-30   	5-10   
		19-80	Loam, fine   sandy loam,   sandy loam	SC-SM, CL-ML     	A - 4   	0-2	1-5     	85-100     	85-98     	55-90     	35-70     	20-30     	5-10   
Percy	10	0-10	Loam	CL-ML, CL,	A-4, A-6	0-1	0-3	90-100	  85-100 	70-95	35-70	20-40	5-15
		10-25	Loam, fine   sandy loam,   sandy loam	CL, CL-ML   	A-4   	0-1   	1-5   	85-100   	85-98   	55-90   	35-70   	20-30   	5-10   
		25-80	Loam, fine   sandy loam,   sandy loam	CL, SC, CL-   ML, SC-SM 	<b>A - 4</b>   	0-1   	1-5     	85-100     	85-98     	55-90     	35-70     	15-30     	5-10   
Foxhome	5	0-10	Sandy loam	SM	A-4	0	0-2	95-100	90-100	75-90	35-50	15-30	NP-5
		10-15	Fine sand,   loamy fine   sand, sand	SW-SM, SM	A-2, A-3   	0-1	0-3	95-100   	90-100   	70-85   	5-35   	0-25   	NP-5
		15-23	gravelly sand,   very gravelly   coarse sand,   very gravelly   loamy sand	SP-SM, SP,   GP-GM, GP   	<b>A-1</b>     	0     	2-5     	30-65       	15-45       	5-40     	0-10     	0-20       	NP - 1       
		23-80	Loam, clay   loam, silt   loam	CL, ML, CL-ML	A-4, A-6     	0-1	1-5   	90-100	85-100     	75-90   	50-80	20-40	1-15   
1170:			İ	İ	İ	İ	İ	İ	İ	ĺ	İ	İ	İ
Skagen, very	ĺ												
cobbly	85		Loam	CL, ML, CL-ML	1	0-2	1-5	95-100			1	1	NP-10
		10-28	Loam, fine   sandy loam,   sandy loam	SC-SM, CL-ML   	 	0   	1-5   	85-100   	85-98   	55-90   	35-70   	20-30   	5-10   
		28-80	Loam, fine   sandy loam,   sandy loam	CL-ML, SC-SM   	A-4   	0-1	1-5   	85-100   	85-98   	55-90   	35-70   	20-30	5-10   
			I	I	I	I	I	I	I	I	1	I	l

Table 23.--Engineering Index Properties--Continued

Map symbol	Percent	Depth	USDA texture	Classif	ication	Fragi	ments		rcentag	-	_	Liquid	   Plas-
and	of	-				>10	3-10	i					ticity
component name	map unit			Unified	AASHTO	inches	inches	4	10	40	200	ï	index
		In	İ	Ī		Pct	Pct	I	Ī		Ţ	Pct	
1170:			 	 	 		 	 	 	 	1		
Percy, very				! 	l I	1	 	 	l I	l I	ì	1	i
cobbly	10	0 - 8	Loam	SC-SM, CL,	  A-4, A-6 	0-2	   1-5 	  90-100 	  85-100 	  70-95 	35-70	20-40	   5-15 
	 	8-23	Loam, fine sandy loam, sandy loam	CL, CL-ML	A-4   	0-1	1-5   	85-100   	85-98   	55-90   	35-70	20-30	5-10   
		23-80	Loam, fine sandy loam, sandy loam	CL, SC-SM,	<b>A-4</b>   	0-1	1-5   	85-100   	85-98   	55-90   	35-70	15-30   	5-10   
Foxhome	5	0-10	Sandy loam	SM	  A-4	0	0-2	  95-100	  90-100	  75-90	35-50	15-30	  NP-5
		10-15	Fine sand,   loamy fine   sand, sand	SW-SM, SM	A-3, A-2 	0-1	0-3	95-100	90-100	70-85	5-35	0-25	NP - 5
		15-23	gravelly sand,   very gravelly   coarse sand,   very gravelly   loamy sand	  SP-SM, SP,   GP-GM, GP   	   <b>A-1</b>   	0     	2-5     	  30-65     	  15-45     	   5-40     	0-10       	0-20	  NP-1     
		23-80	Loam, clay   loam, silt   loam	ML, CL, CL-ML	A-4, A-6 	0-1	1-5	90-100	85-100   	75-90   	50-80	20-40	1-15   
1179B:				 	 		 	 	l İ	 	l I		 
Moranville	85	0 - 8	Loamy fine sand	SM	A-2	0	0	100	100	65-80	15-35	15-20	NP-5
	 	8-24	Fine sand,   loamy fine   sand	<b>SM</b>   	A-2, A-4 	0	0   	100   	100   	75-90   	15-50   	10-15	<b>NP</b>   
		24-42	Silty clay loam	CL	A-6, A-7	0	0	100	100	90-100	80-95	35-45	15-20
		42-80	Very fine sandy   loam, silt   loam, silty   clay loam	CL-ML, CL, ML     	A-4, A-6, A-7     	0     	0     	100     	95-100     	80-100     	50-95     	20-45     	5-15     

Table 23.--Engineering Index Properties--Continued

Classification Fragments Perc

Map symbol	Percent	Depth	USDA texture	Classi	fication	i	ments		rcentage sieve n	_	ng	  Liquid	
and component name	of map unit			Unified	AASHTO	>10	3-10 inches	   4	10	40	200	limit	ticity
component name	map unit	l In	<u> </u>	Unified	AASHTO	Pct	Pct	4	1 10	1 40	200	Pct	Index
 		111		 		FCC	FCC	l I	 	 	l I	FCC	I I
1179B:				! 		İ	İ	İ	İ	İ	İ	İ	İ
Baudette	5	0-8	Fine sandy loam	ML, SM	A-4	0	0	100	100	75-95	40-60	15-25	NP-4
   		8-10   	Very fine sandy   loam, fine   sandy loam,   silt loam	ML, SM     	A-4   	0     	0   	100     	100     	75-100     	40-90     	15-40     	NP-10     
İ		10-30	Clay loam, silt loam, silty clay loam	CL, ML, CL-M	L A-4, A-6, A-7	0	0	100	100	95-100	80-100	20-50	5-20
		30-80	Silt loam, very   fine sandy   loam, loamy   very fine sand	 	<b>A-4</b>   	0	   0   	   100     	   100     	  95-100     	  70-100     	20-40	   1-10     
Hiwood	5	   0-3	  Fine sand	SM, SC-SM	A-2, A-3	0	l I 0	100	95-100	  80-95	   5-25		   NP
		3-22	Sand, fine   sand, loamy   sand	SC-SM, SM	A-2, A-3	0	0	100	95-100		5-20	   	NP 
İ		22-80	Sand, fine sand	  SP-SM, SP 	A-2, A-3	0	0	100	95-100	80-95	1-12		NP
Spooner	5	0-6	  Very fine sandy   loam	ML, SM	A-4	0	   0 	100	100	90-100	35-55	20-40	1-10
   		6-15	Loamy very fine   sand, very   fine sandy   loam, loam	ML, SC, SM,   CL 	A-4, A-6	0     	0     	   100   	100     	  90-100     	  35-60   	10-40     	1-15     
 		15-22	Loam, silt loam, silty clay loam	CL-ML, CL	A-4, A-6	0   	0   	100   	100   	90-100   	60-85	20-40	5-15   
		22-60	Very fine sandy   loam, silt   loam, sandy   loam	CL, ML, SC,   SM 	A-4, A-6	0     	0     	100     	100     	  90-100     	  35-95     	16-40     	NP-15     
1181:				 									
Rosewood    	50	0-8 8-15	Fine sandy loam  Fine sandy   loam, loamy   fine sand,   sandy loam	SM, SC, SC-S SM, SC, SC-S	,	0 0	0 0	100   100 	1	65-90  60-85 			NP-10  NP-10 
İ		15-80	Fine sand, sand	SP-SM, SM	A-1, A-2, A-3	0	0	85-100	75-95	45-75	5-25	5-15	NP
Ulen      	40		Fine sandy loam  Loamy fine   sand, fine   sand	  SC-SM, SC, S  SM 	A-4   A-2 	0   0   1	   0   0 	   100  95-100   	100  95-100 	  80-100  70-95   		0-25   0-14 	NP-8   NP 
		18-80	Fine sand	SP-SM, SM	A-2, A-3	0	0	100	95-100	80-100	5-35	0-14	NP

Table 23.--Engineering Index Properties--Continued

Map symbol and	Percent of	   Depth	USDA texture	Classif	ication	i	ments		_	e passi: umber	ng	Liquid	
component name	map unit	 	 	   Unified	AASHTO	>10  inches	3-10  inches		10	40	200	limit	ticity  index
		In	1			Pct	Pct	-				Pct	
1181:	 	 	 	 	 		 		 		 		[
Redby	5	0-3	Loamy fine sand	SM	A-2, A-3	0	0	100	95-100	85-95	5-25	0-20	NP-3
_	İ	3-28	Fine sand, sand	SM, SW-SM	A-2, A-3	0	0	100	95-100	80-95	5-35	0-20	NP-3
		28-80	Fine sand, sand	SP, SP-SM	A-2, A-3	0	0	100	95-100	80-95	2-12	0-14	NP
Deerwood	3	   0-14	Muck	  PT	  A-8	0	0	 	 	 	 		 
	     	14-16     	Fine sand,   loamy sand,   fine sandy   loam	SP-SM, SM     	A-2, A-4   	0     	0-5     	95-100     	90-100     	50-75     	12-50   	0-20	NP - 4     
		16-80   	Fine sand,   sand, gravelly   sand		A-1, A-2, A-3   	0   	0-5   	75-100     	55-100     	35-70   	1-25   	0-14	NP   
Syrene	2	0-11	Sandy loam	SC, SC-SM, SM	A-4	0	0-3	95-100	85-100	55-70	35-50	15-35	NP-10
•				SM, ML 	   <b>A-4</b> 	0   	0-3 	95-100	85-100   	55-75   	35-65 	20-40	1-10 
		19-80     	Stratified gravelly coarse sand to loamy fine sand	İ	A-1, A-2, A-3     	0     	2-5       	75-95       	55-80       	30-60	0-10	5-20     	NP-5       
1182:		 		 	 			İ			 		
Warroad	85	0-11	Fine sandy loam	ML, SM	A-4	0	0	95-100	95-100	70-85	35-55	20-25	NP-5
	   	11-26   	Loamy fine   sand, fine   sand	<b>sm</b>   	A-2   	0   	0   	95-100   	95-100   	55-80   	25-35   		NP   
		26-80   	Silt loam,   silty clay   loam	  -  CL	<b>A</b> -6   	0   	0   	100   	95-100     	85-100   	70-90   	25-40	10-15   
Wabanica	   7	   0-8	  Silt loam	CL, CL-ML	  A-4, A-6	0	0	100	  95-100	95-100	  60-90	25-35	   5-15
		8-19   	Silt loam,   silty clay   loam	1 .	A-4, A-6 	0	0	100   		85-100   			5-15   
		19-80   	Silt loam,   silty clay   loam	CL-ML, CL   	A-4, A-6   	0   	0     	100   	95-100       	85-100     	60-95     	25-40	5-15     

Classification

Table 23.--Engineering Index Properties--Continued

Map symbol	Percent	Depth	USDA texture	Classif:	ication	Fragi	ments		rcentage sieve n	e passin umber	ıg	  Liquid	   Plas-
and	of					>10	3-10		10	1.0		limit	ticity
component name	map unit			Unified	AASHTO		inches	4	10	40	200	<u> </u>	index
1182:	   	In	   	   	   	Pct   	Pct   	   	   	   		Pct   	   
Enstrom	5	0-6	Loamy fine sand		A-2	0	0			80-95			NP
	   		Fine sand,   sand, loamy   sand		A-2, A-3   	0	0-3   	 	80-100   		5-30	0-20   	 
	     	29-80	Fine sandy   loam, loam,   silty clay   loam	SC-SM, CL-ML,   SC, CL     	A-4, A-6     	0-1	0-3     	90-100     	80-95     	65-90     	35-80	20-40     	5-15     
Sax	3	0-15	Muck	PT	A-8	0	0					i	i
	     	15-24	Mucky silt   loam, silt   loam, silty   clay loam	CL-ML, CL	A-4, A-6     	0	0	100	100   	90-100	60-85	20-40	5-15   
	   	24-39	Silt loam,   silty clay   loam	CL, CL-ML   	A-4, A-6   	0   	0   	100   	100   	90-100   	60-85	20-40   	5-15   
	     	39-71	Silt loam,   silty clay   loam, very   fine sandy   loam	ML, CL-ML, CL       	A-4, A-6     	0     	0     	100     	100     	90-100     	50-90	16-40     	NP-15       
	     	71-80	Silty clay   loam, silty   clay, clay 	CL, CH     	<b>A-7</b>   	0	0   	100   	100     	90-100   	75-95	40-80     	15-50     
1187:													
Dora, ponded	90	0-24		PT	A-8	0	0						
	     	24-30	Mucky silt   loam, mucky   silty clay   loam	CL, CH     	<b>A-7-6</b>     	0	0   	100     	100     	90-100     	75-95   	40-55     	20-35     
	   	30-80	Silty clay   loam, silty   clay, clay 	CH, CL     	<b>A-7-6</b>     	0	0   	100     	100     	90-100   	75-95	45-75     	30-50   
Seelyeville,				!									<u> </u>
ponded    	4     	0-18 18-80		PT   PT   	A-8   A-8 	0 0	0   0 	   	   	   		   	   
'	'		1	1	1	1		1	1	'	1		'

Table 23.--Engineering Index Properties--Continued

Map symbol	   Percent	Depth	USDA texture	Classif	ication	i	ments		_	e passi: umber	ng		   Plas-
and .	of					>10	3-10		1		1 000	limit	ticity
component name	map unit		1	Unified	AASHTO	<u> </u>	inches	4	10	40	200	<u> </u>	index
		In				Pct	Pct					Pct	
1187:	l I	l I		 	 	 	 	 	 	l I	I I		 
Wildwood	   4	0-12	Muck	  PT	  A-8	0	0	 	 				 
	i		Clay, silty	CH	A-7	0	0	100	100	95-100	85-98	75-90	50-65
	İ		clay, silty			i	i	İ	i	İ			
	İ	İ	clay loam	İ	İ	į	į	į	į	į	i	į	į
	ĺ	33-80	Clay, silty	CH	A-7	0	0	100	85-100	85-100	60-95	65-90	40-65
			clay						[				
	!			!	!				[				
Boash	2		Clay loam	CL	A-7	0				80-100		1	20-25
		9-29	Clay, silty	CL, CH	A-7	0	0-2	95-100	90-100	80-100	70-95	45-80	25-50
	l I		clay loam, silty clay	l I	 			 					 
	l I	   29_80	Loam, sandy	CL-ML, CL	  A-4, A-6	0-1	   1-5	   95_100	   85_98	  70-95	  50-90	  24_35	   6-15
	l I	23 00	loam, silt		1, 1, 1, 0	0 =	1 3	33 100		70 33		1	0 13
	İ		loam			i	<u> </u>	İ	i	İ	i	i	İ
	İ	İ	İ	j	j	į	į	į	į	į	į	į	į
1191:													
Sahkahtay	85	0-4	Sandy loam	1	A-2, A-4	0					1	15-25	
	!	4-8	Sand, loamy	SM, SP-SM	A-2	0	0	85-100	80-100	50-85	5-25	0-14	NP
			sand										
		8-14	gravelly sandy loam, sandy	SC, CL	A-6	0	0-5	80-100	75-98	50-85	40-60	30-40	10-20
	l I	l I	clay loam,	 	 	 	 	 	 	 	I I		 
	l I	 	loam	 	 	 	 	 	i i	l I	i i		 
	İ	14-80	Loamy sand,	SM, SW-SM, SW	A-1, A-2-4	0	0-5	55-90	50-85	15-60	2-20	0-14	NP
	İ		sand, gravelly	•	İ	i	i	İ	İ	İ	İ	i	İ
	ĺ		coarse sand	ĺ	ĺ	İ	ĺ	ĺ	ĺ	ĺ	İ	İ	ĺ
Cormant	5		Loamy fine sand	•	A-2, A-3, A-4		0	100	100	80-100		0-14	NP
		6-80	Fine sand,	SP-SM, SP, SM	A-2, A-3	0	0	100	100	75-100	1-20	0-14	NP
			sand, loamy										
	l I	l I	fine sand	 	 	 	 	 	 	l I	I I		 
Deerwood	l 5	   0-14	Muck	  PT	  A-8	0	0	 	 	i		i	 
	İ		Fine sand,	1	A-2, A-4	0	0-5	95-100	90-100	50-75	12-50	0-20	NP-4
	İ		loamy sand,	İ	İ	i	i	İ	İ	İ	İ	i	İ
	İ	İ	fine sandy	İ	j	į	į	į	İ	İ	į	į	į
			loam										
		16-80	Fine sand,	•	A-1, A-2, A-3	0	0-5	75-100	55-100	35-70	1-25	0-14	NP
			sand, gravelly					ļ	ļ	ļ			ļ
			sand							ļ			

Table 23.--Engineering Index Properties--Continued

Map symbol	Percent	Depth	USDA texture	Classif	ication	Frag	ments		rcentag	-	ng	Liquid	   Plas-
and	of		İ		1	>10	3-10	i				limit	
component name	map unit			Unified	AASHTO	inches	inches	4	10	40	200	ï	index
	-	In				Pct	Pct	İ	<u>.</u>	<u>.                                      </u>		Pct	
1191:				 	 		 			 	 		 
Karlstad	3	0-7	Loamy sand	SM, SP-SM	A-2, A-3	0-5	0-5	95-100	95-100	75-95	5-35	15-25	NP-4
		7-10   	Coarse sandy   loam, sandy   loam, fine   sandy loam	SC, SC-SM, SM     	A-2, A-4   	0-5	0-5     	95-100     	95-100     	75-95     	12-50     	15-25     	NP-10     
		10-14	gravelly coarse   sandy loam,   gravelly sandy   loam, gravelly   fine sandy   loam	SM, SC	A-1, A-2       	0-5	0-25	65-95       	50-75	25-50	10-30       	15-25       	NP-10         
		14-80   	Stratified gravelly coarse sand to loamy fine sand	SP-SM, SP         	A-1, A-2     	0-5     	0-25       	60-100       	35-100       	20-80	0-55       	0-20       	NP - 3       
Redby	2		  Loamy fine sand	!	  A-2, A-3	0	0	100	  95-100	  85-95		0-20	
			Fine sand, sand		A-2, A-3	0	0	100	95-100	80-95	5-35	0-20	NP-3
		28-80 	Fine sand, sand	SP-SM, SP 	A-2, A-3 	0	0 	100 	95-100 	80-95 	2-12 	0-14	NP 
1206:													
Cormant	55	0-7	Loamy fine sand	SM, SP-SM	A-2, A-3, A-4	0	0	100	100	80-100	5-40	0-14	NP
		7-80   	Fine sand,   sand, loamy   fine sand	SP-SM, SM, SP   	A-2, A-3   	0	0   	100   	100   	75-100   	1-20   	0-14   	NP   
Redby	35	0-4	Loamy fine sand	SM	A-2, A-3	0	0	100	95-100	  85-95	5-25	0-20	  NP-3
		4-30	Fine sand, sand	SW-SM, SM	A-2, A-3	0	0	100	95-100	80-95	5-35	0-20	NP-3
		30-80	Fine sand, sand	SP, SP-SM	A-2, A-3	0	0	100	95-100	80-95	2-12	0-14	NP
Hiwood	5	0-3	Fine sand	SM, SC-SM	A-2, A-3	0	0	100	95-100	80-95	5-25		NP
		3-22   	Sand, fine   sand, loamy   sand	SC-SM, SM   	A-2, A-3   	0	0   	100   	95-100   	80-95   	5-20   		NP   
		22-80	Sand, fine sand	SP-SM, SP	A-2, A-3	0	0	100	95-100	80-95	1-12		NP
Leafriver	5	0-13	Muck	  PT	  A-8	0	0				 		 
		13-80	Loamy sand,   fine sand,   sand	SP, SP-SM, SM   	A-1-b, A-2,   A-2-4, A-3 	0   0	0   	95-100   	80-100   	45-70   	3-35	   	NP   

Table 23.--Engineering Index Properties--Continued

Map symbol	Percent	   Depth	USDA texture	Clas	sification	Fragi	ments		_	e passi:	ng	  Liquid	   Plas-
and	of	į -	İ			>10	3-10	i				limit	ticity
component name	map unit	ĺ		Unified	AASHTO	inches	inches	4	10	40	200	ĺ	index
		In	[			Pct	Pct		I		[	Pct	
1214:		 	1						 			 	 
Mustinka	90	   0-9	Clay loam	CH, CL	  A-7	0	0	100	1 100	   90_100	  70_95	40-52	  20-30
Muscinka	50		Silty clay,	CH, CL	A-7	0	0	100	100	90-100		47-72	
		J-33   	silty clay   loam, clay						100   	   	   	<del>- 7 - 7 -</del>   	25-44   
		35-62	Silty clay	CL	A-6, A-7	0	0	100	  95-100	85-100	70-95	31-47	12-25
		 	loam, clay loam, silt loam	   			   		 			 	   
		   62-80	Clay loam,	CL	A-6, A-7	0-1	   1-5	   95_100	   85_98	  75-95	  50-90	  31-47	  12_25
		62-80	silty clay   loam, loam		A-0, A-7	0-1	1-5		63-96	75-95	50-90	31-47	12-25   
		 		 		l	 	i	l I	i	 	 	! 
Espelie	4	0-10	Fine sandy loam	SM, ML, SC	A-2, A-4	0	0	95-100	  85-100	60-85	30-65	15-25	NP-8
			Loamy sand,	SM, SP-SM	A-2, A-4	0	1					10-20	
		 	loamy fine sand, fine						 		 	 	 
		27 00	sand Clay, silty	CL, CH	  A-7	0	   0	100 100	   0E 100		   70 100	  40-65	
		27-80	clay, sifty clay, clay loam	CL, CR   				   	65-100   		70-100   	40-65	20-40
Wildwood	   4	   0-12	Muck	   PT	  A-8	0	   0	 	 	 	 	 	 
WIIQWOOQ	] <del>*</del>		Clay, silty	CH	A-7	0	0	100	100	95-100	  85-98	  75-90	  50-65
		12-33   	clay, silty clay loam						100   	   	   	75-50   	   
		33-80	Clay, silty	CH 	A-7	0	0	100	85-100	  85-100 	60-95	  65-90 	  40-65 
Dalbo	2	   0-15	Loam	ML, CL	A-4, A-6	0	   0	100	   100	  95-100	  60-100	  30-40	   5-15
2425	_		Clay, silty   clay, silty   clay loam	CH, CL	A-7	0	0	100	100			40-65 	
		   23-80   	Silty clay   loam, silty   clay, clay	  CH, CL   	  A-6, A-7 	0   	   0 	   100   	  95-100   	  85-100   	  65-95   	  40-65   	  20-40   
1274B:													 
Redby	   40	   0-10	Loamy fine sand	  SM	A-2, A-3	0	   0	   100	   95-100	  85-95	   5-25	   0-20	  ND-3
veany	<del>1</del> 0		Fine sand, sand	1	A-2, A-3	0	0	100	95-100  95-100		5-30		NP-3  NP-3
			Sand, fine sand	'	A-2, A-3	0	0	100	95-100	1	2-12	0-14	NP
					, 5			-30					

Table 23.--Engineering Index Properties--Continued

Map symbol	Percent	Depth	USDA texture	Classif	ication	Frag	ments		_	e passi: umber	ng	Liquid	   Plas-
and	of	-	İ			>10	3-10	İ				limit	ticity
component name	map unit		İ	Unified	AASHTO	inches	inches	4	10	40	200	Ï	index
		In	[	l	[	Pct	Pct	]		!		Pct	
1274B:	 			 					 				 
Hiwood	30	0 - 7	Loamy fine sand	SM, SC-SM	A-2, A-3	0	0	100	95-100	80-95	5-25		NP
	į Į	7-32	Loamy sand, fine sand, sand	SM, SC-SM 	A-2, A-3	0	0   	100   	95-100   	80-95   	5-20		NP 
	į	32-80	Sand, fine sand	SM, SP-SM	A-2, A-3	0	0	100	95-100	60-95	5-30	0-20	NP-3
Leafriver,	ļ					İ	İ	İ		İ			
wooded	15		Muck	PT	A-8	0	0						
	 	10-13	Loamy sand,   sandy loam	SM 	A-2, A-4	0	0	100 	95-100 	55-80 	15-40 	15-20 	NP-4
	   	13-80	Loamy sand,   fine sand,   sand	SM, SP, SP-SM   	A-1-b, A-2,   A-3, A-2-4	0   	0   	95-100   	80-100   	45-70   	3-35		NP   
Clearriver	5	0-2	Loamy fine sand	SP-SM, SM	  A-2	0	0	95-100	  85-100	40-90	10-35	15-25	  NP-10
	į I	2-21	Sand, loamy sand	SM, SP-SM	A-2, A-3	0	0	95-100	85-100 	55-90 	5-35	i	NP
	     	21-80	Stratified fine   sand to   gravelly   coarse sand	SP, SP-SM     	A-1, A-2, A-3   	0     	0-2	75-100     	65-85     	40-65     	0-10     		NP     
Cormant	5	0 - 6	Loamy fine sand	SM, SP-SM	A-2, A-3, A-4	0	0	100	100	80-100	5-40	0-14	NP
	   	6-80	Fine sand,   sand, loamy   fine sand	SP, SP-SM, SM   	A-2, A-3	0   	0   	100   	100   	75-100   	1-20   	0-14   	NP   
Zimmerman	5	0 - 6	  Fine sand	SP-SM, SM	A-2	0	0	100	95-100	95-100	10-20	15-20	NP
	   	6-80	Fine sand,   loamy fine   sand	SP-SM, SM     	A-2, A-3   	0	0   0	100	95-100     	60-100     	5-20   	0-20	NP - 5   
1298:	ļ		İ	İ		İ	İ	İ	İ	İ	İ	İ	İ
Borup    	90       	0-8 8-80	Silt loam  Very fine sandy   loam, silt   loam	ML   ML   	A-4   A-4 	0   0 	0   0 	100   100 	100   100 	95-100  90-100 		20-34	

Table 23.--Engineering Index Properties--Continued

Map symbol	   Percent	Depth	USDA texture	Classif	ication	Frag	ments		_	e passi: umber	ng	  Liquid	   Plas-
and	of	-	İ		1	>10	3-10	i				limit	ticity
component name	map unit		Ì	Unified	AASHTO	inches	inches	4	10	40	200	į	index
		In				Pct	Pct		[		[	Pct	
1298:			 	 	 								
Augsburg,			l I	! 	I I	ł	 	l I	l I	<u> </u>	l I	 	i
depressional	3	0-9	  Mucky very fine	OT. MT. CT.	  A-4. A-6	0	0	100	100	95-100	50-90	15-40	  NP-15
			sandy loam	ML, CL		i							
	i i	9-16	Loam, very fine	ML, CL-ML, CL	A-4	0	0	100	100	95-100	80-90	15-35	NP-10
	į į		sandy loam,	İ	İ	i	İ	į	İ	į	İ	į	İ
	İ		silt loam	ĺ	ĺ	İ	İ	ĺ	ĺ	İ	ĺ	İ	İ
		16-32	Loamy very fine	ML, CL, CL-ML	A-4	0	0	100	100	95-100	80-90	15-35	NP-10
			sand, very										
			fine sandy										
			loam, loam										
		32-80	Silty clay,	CH	A-7	0	0	95-100	95-100	95-100	95-100	50-80	35-55
			clay, silty		 								
			clay loam	 	l I	l I	 	 	l I		l I	 	
Glyndon	   3	0 - 7	  Very fine sandy	  мт.	   A-4	0	0	100	100	  95-100	  70-95	  20-30	  NP-5
027.14011		• ,	loam		 			200	=00				
	i	7-80	Silt loam, very	ML, CL-ML, CL	A-4	0	0	100	100	90-100	85-95	20-30	NP-10
	i i		fine sandy	İ	İ	j	İ	į	į	İ	į	į	i
	i i		loam, loam	ĺ	ĺ	İ	İ	ĺ	ĺ	ĺ	ĺ	ĺ	ĺ
Sago	2	0-14	1	1	A-8	0	0						
		14-80	Stratified fine	1	A-4, A-2	0	0	98-100	95-100	70-95	15-85	15-30	2-9
			sand to silt	SM									
			loam										
Skime	   2	0-6	Loamy fine sand	 	  A-2	0	0	100	   95_100	  65-90	  15_35	0-20	   NTD _ 5
SKIME	4		Fine sand,	SM, SC-SM	A-2	0	0			45-90		0-20	1
	i i	0 17	loamy sand,						33 100	13 30	13 33	0 20	
	i		loamy fine		<u> </u>	i	İ	İ	i	i	i	<u> </u>	i
	i i		sand	İ	İ	i	İ	İ	İ	i	İ	i	i
	i i	17-22	Sandy loam,	SC, SC-SM	A-2, A-4	0	0	100	100	60-85	30-50	20-30	5-10
	İ		fine sandy	ĺ	ĺ	İ	İ	ĺ	ĺ	İ	ĺ	İ	İ
			loam										
			Sand, fine sand	•	A-2, A-3	0	0	100	100	50-80	5-35	0-0	NP
		72-80	Stratified fine	1	A-2, A-4	0	0	100	100	65-95	15-85	15-30	NP-10
			sand to very	SM						!			!
			fine sandy										
			loam to silt loam	 	 			 	 		 		
			Loam	 	l I	l I	 	I I	I I	1	I I	 	1

Map symbol	Percent	Depth	USDA texture	Classif	ication	_ii	ments		rcentage sieve n	-	ng		   Plas-
and component name	of     map unit		 	Unified	AASHTO	>10	3-10	   4	10	40	200	limit	ticity  index
		In	1			Pct	Pct	<u> </u>		<u>                                     </u>	1	Pct	
			İ	İ	į		İ		į	ĺ	į	İ	İ
1302: Foldahl	   85	0 10	  Fine sandy loam	lver ove	  A-4	   0	   0	   100	  95-100			115.00	  NP-4
roidani	85			SP-SM, SM	A-4  A-2, A-3	0-1	0-3		90-100			0-15	1
		12-50	loamy fine   sand, sand		R-2, R-3   		0-3   	   	   	   	   		
		30-80	•	CL, CL-ML,   SC-SM	A-4, A-6 	0-1	1-5   	95-100	75-95   	70-90   	50-85   	15-40	5-20
Kratka	   10	0 - 8	  Fine sandy loam	  SC-SM, SM	  A-4	0	   0	  95-100	  90-100	  50-80	  36-50	  15-25	2-6
		8-22	Loamy sand,   sand, loamy   fine sand	SP-SM, SW-SM	A-2, A-3 	0	0 	95-100	90-100	50-80 	5-35	0-20	NP-3
		22-80	Loam, clay loam	CL, CL-ML,	  A-4, A-6 	0-1	   1-5 	  95-100 	  90-100 	  75-90 	  50-75 	25-40	   5-20 
Foxhome	5	0-10	  Sandy loam	  SM	  A-4	0	0-2	  95-100	90-100	  75-90	  35-50	15-30	NP-5
		10-15	Fine sand,   loamy fine   sand, sand	SW-SM, SM	A-2, A-3 	0-1	0-3	95-100   	90-100	70-85   	5-35   	0-25	NP-5   
		15-23	gravelly sand, very gravelly coarse sand, very gravelly loamy sand	SP-SM, SP, GP-GM, GP	<b>a-1</b>       	0	2-5     	30-65	15-45       	5-40     	0-10     	0-20	NP-1     
		23-80	Loam, clay   loam, silt   loam	CL-ML, CL, ML	A-4, A-6   	0-1	1-5   	90-100	85-100   	75-90   	50-80	20-40	1-15   
1304:	 		 	 		l I		 		 	! 		
Glyndon	85	0-11	  Very fine sandy   loam	  ML 	A-4	0	,   0 	100	100	95-100	70-95 	20-30	NP - 5
				CL, CL-ML, ML	1	0	0	100	100			20-30	
		56-80	Very fine sandy   loam, silt   loam	SM, SC, CL,   ML   	A-4   	0	0     	100     	100     	85-100     	35-75     	10-30   	NP-10   
Borup	10	0 - 8	Silt loam	ML	A-4	0	0	100	100	95-100	70-95	20-34	NP-7
		8-80	Very fine sandy   loam, silt   loam	<b>ML</b>   	A-4   	0	0   	100   	100     	90-100     	60-95     	0-30	NP - 5   

Table 23.--Engineering Index Properties--Continued

Table 23.--Engineering Index Properties--Continued

Map symbol	Percent	Depth	USDA texture	Classif	ication	Fragi	ments		rcentag	_	ng	  Liquid	   Plas-
and	of					>10	3-10	ļ				limit	ticity
component name	map unit			Unified	AASHTO	inches	inches	4	10	40	200		index
		In				Pct	Pct					Pct	
1304:						! 	 	l I	l I	l I		 	 
Skime	5	0-6	Loamy fine sand	SC-SM, SM	A-2	0	0	100	95-100	65-90	15-35	0-20	NP-5
		6-17	Loamy sand,   loamy fine   sand, fine   sand	SC-SM, SM   	A-2   	0   	0   	95-100     	95-100     	45-90   	15-35     	0-20   	NP - 5     
		17-22		SC, SC-SM	A-2, A-4 	   0 	   0 	   100   	   100 	  60-85   	  30-50   	  20-30   	   5-10   
	į į	22-72	Sand, fine sand	SM, SP-SM	A-2, A-3	0	0	100	100	50-80	5-35	0-0	NP
		72-80	Stratified fine   sand to very   fine sandy   loam to silt   loam	SC-SM, CL-ML,	A-2, A-4     	0	0	100       	100       	65-95       	15-85       	15-30       	NP-10     
1305:				 	1	 	 						
Hilaire	85   	0-13	Fine sandy loam	ML, SC, SM,   CL	A-4, A-2 	0 	0 	90-100 	75-100 	50-85 	30-55 	15-25 	NP - 8 
		13-33	Loamy sand, loamy fine sand, sand	SP-SM, SM   	A-1, A-2, A-4   	0   	0-2   	85-100   	75-100   	45-85   	10-40   	15-20   	NP - 4   
		33-80	Clay, silty   clay, silty   clay loam	CH, CL   	A-7   	0   	0   	95-100   	85-100   	75-95   	65-90   	40-70   	20-45   
Espelie	11	0-10	  Fine sandy loam	ML, SM, SC	A-2, A-4	0	0	  95-100	  85-100	  60-85	30-65	  15-25	   NP - 8
		10-27	Loamy sand, loamy fine sand, fine sand	SP-SM, SM     	A-2, A-4   	0   	0-2	85-100     	60-100     	30-80	10-40	10-20   	NP - 4     
		27-80	Clay, silty clay loam	CL, CH     	<b>A-7</b>   	0   	0   	90-100     	85-100     	80-100   	70-100     	40-65   	20-40
Grano	2	0-11	Loam	CL-ML, SC-SM	A-4, A-6	0	0	95-100	90-97	65-85	45-65	20-35	5-15
		11-41	Silty clay   loam, silty   clay, clay	CL, CH   	A-7   	0   	0   	95-100   	90-97   	80-95   	70-95   	40-80   	20-50   
		41-80	Clay, silty   clay, silty   clay loam,   stratified   silt loam to   clay	CH, CL         	A-7       	0       	0         	95-100           	90-100           	80-97         	75-95           	40-80         	20-50           

Map symbol	   Percent	Depth	USDA texture	Classif	ication	Fragi	ments	Pe	ercentag	_	ng	  Liquid	   Plas-
and	of	i	İ			>10	3-10					limit	
component name	map unit			Unified	AASHTO	inches	inches	4	10	40	200		index
		In				Pct	Pct					Pct	
1305:	 			 	 		 			 	 		 
Redby	2	0-3	Loamy fine sand	SM	A-2, A-3	0	0	100	95-100	85-95	5-25	0-20	NP-3
	j	3-28	Fine sand, sand	SW-SM, SM	A-2, A-3	0	0	100	95-100	80-95	5-35	0-20	NP-3
		28-80	Fine sand, sand	SP, SP-SM	A-2, A-3	0	0	100	95-100	80-95	2-12	0-14	NP
1314:	 			 	 		 			 	 		 
Tacoosh	90	0-17	Mucky peat	PT	A-8	0	1-10		i		i		i
	ĺ	17-33	Mucky peat	PT	A-8	0-5	1-10						
		33-80	Silt loam,	CL-ML, CL	A-4, A-6	0	0	100	95-100	90-100	70-95	25-40	5-20
			silty clay										
	 		TOAIII	 	 								! 
Rifle	8	0-8	Mucky peat	PT	A-8	0	0-10		i		j	i	i
		8-80	Mucky peat	PT	A-8	0	0-5						
Sax	   2	   0-15	Muck	  PT	  A-8	0	0				 		 
	j i	15-24	Mucky silt	CL-ML, CL	A-4, A-6	0	0	100	100	90-100	60-85	20-40	5-15
			loam, silt										
			loam, silty										
			clay loam										
		24-39	Silt loam,	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	60-85	20-40	5-15
	 		silty clay	l I	l I		 				 		l I
	 	   39-71		CL, ML, CL-ML	  A-4. A-6	0	l 0	100	100	90-100	  50-90	16-40	  NP-15
	i	00 /2	silty clay		,				200				
	İ		loam, very			i	i		İ	i	İ	i	İ
	į į		fine sandy	ĺ	ĺ	İ			İ	ĺ	ĺ	İ	ĺ
			loam										
		71-80		CL, CH	A-7	0	0	100	100	90-100	75-95	40-80	15-50
			loam, silty										
			clay, clay	 									 
1316:	 			 	 					 	 		 
Wheatville	85	0-12	Loam	ML, CL, CL-ML	A-4	0	0	100	100	90-100	50-95	15-35	NP-10
	j	12-35	Loamy very fine	ML, CL, CL-ML	A-4	0	0	100	100	85-100	80-95	15-35	NP-10
			sand, silt										
			loam, very										
			fine sandy										ļ
		25 00	loam	   GT GTT			   0	100	100				
	 	35-80	stratified	CL, CH	A-7, A-6	0	0	100	100	95-100	90-100	35-80	15-45
	 		very fine	 	 					 	l I		l I
	İ		sandy loam to	 								1	! 
			silt loam to	İ	į	i	i			i	i	i	İ
	i i		silty clay	İ	İ	į	į i		į	į	į	į	İ
	l i		loam to clay				l i						

Table 23.--Engineering Index Properties--Continued

Table 23.--Engineering Index Properties--Continued

Map symbol	   Percent	Depth	USDA texture	Classif	ication	Fragi	ments		_	e passi: umber	-	  Liquid	   Plas-
and	of	_	İ			>10	3-10	İ				limit	ticity
component name	map unit		ĺ	Unified	AASHTO	inches	inches	4	10	40	200	ĺ	index
		In		   	 	Pct	Pct			[		Pct	
1316:				 									
Augsburg	13	0-9	Loam	ML, CL, CL-ML	,	0	0	100	100		50-90		
	 	9-33	Loam, very fine   sandy loam,   silt loam	ML   	A-4   	0   	0   	100   	100   	95-100   	80-90   	15-30   	NP-10   
	   	33-80	Silty clay,   clay, silty   clay loam	CH   	<b>A-7</b>   	0	0   	95-100   	95-100   	95-100     	95-100   	45-85   	25-65   
Grano	   2	0-11	Loam	CL-ML, SC-SM	A-4, A-6	0	0	95-100	90-97	65-85	45-65	20-35	5-15
		11-41	Silty clay   loam, silty   clay, clay	CL, CH	<b>A-7</b> 	0		95-100   	1	80 - 95   			20-50
		41-80	Clay, silty   clay, silty   clay loam,   stratified   silt loam to   clay	CH, CL         	<b>A-7</b>         	0	0	95-100	90-100	80-97       	75-95       	40-80       	20-50
1326:	 			 	 		 	 	 	 	 	 	 
Augsburg,	j i		İ	İ	İ	j	İ	į	į	İ	į	į	i
depressional	0 to 90	0 - 9	Mucky very fine sandy loam	OL, CL-ML,	A-4, A-6	0	0	100	100	95-100	50-90	15-40	NP-15
	 	9-16	Loam, very fine sandy loam, silt loam	ML, CL-ML, CL   	A-4   	0	0   	100   	100   	95-100   	80-90   	  15-35   	NP-10   
	 	16-32	Loamy very fine sand, very fine sandy loam, loam	ML, CL, CL-ML     	<b>A-4</b>   	0	0   	100     	100     	95-100     	80-90   	15-35     	NP-10   
	 	32-80	Silty clay,   clay, silty   clay loam	С <b>н</b>     	<b>A-7</b>     	0	0   	95-100     	95-100     	95-100     	95-100     	50-80     	35-55     
Wabanica, depressional		0 - 8	  Mucky silt loam	 	  A-4, A-6	0	   0	100	100	   00-100	    70-90	   25-40	   5-15
debressionar			Mucky sit loam  Silty clay   loam, silt   loam		A-4, A-6  A-4, A-5,   A-6, A-7	0	0   0 	100   100   	100   100 		70-90  70-95   		5-15   5-20 
		26-68	Ioam  Silt loam,   silty clay   loam	  CL-ML, CL   	  A-4, A-5,   A-6, A-7 	0	   0 	   100 	   100   	90-100	  70-95   	  25-45   	   5-20 
	 	68-80	1	CH, CL	  A-7 	0	   0 	100 	100	90-100	75-95 	45-65	20-40

Map symbol	Percent	Depth	USDA texture	Classif	ICACION	_   Fragi	ments		sieve n	e passi: umber	.19	  Liquid	   Plas-
and	of		į		<u> </u>	>10	3-10	İ				limit	ticity
component name	map unit		<u> </u>	Unified	AASHTO		inches	4	10	40	200		index
		In				Pct	Pct	 			 	Pct	
1326:			 	 	 		 	 	 	 	 	l I	 
Sax	6	0-15	Muck	PT	A-8	0	0				i		
	     		loam, silt loam, silty clay loam		A-4, A-6     	0	0   	100   	 	90-100	 	     	5-15     
	   	24-39   	Silt loam,   silty clay   loam	CL, CL-ML   	A-4, A-6   	0	0   	100   	100   	90-100   	60-85   	20-40	5-15   
	 	39-71	Silt loam,   silty clay   loam, very   fine sandy   loam	CL-ML, ML, CL	A-4, A-6   	0	0   	100     	100     	90-100     	50-90   	16-40     	NP-15     
	     	71-80		  CL, CH   	   <b>A-7</b>   	0	   0   	   100   	   100   	  90-100     	  75-95     	  40-80   	  15-50     
Espelie	2	0-10	Fine sandy loam	SM, ML, SC	A-2, A-4	0	0	95-100	85-100	60-85	30-65	15-25	NP-8
	     	10-27	Loamy sand, loamy fine sand, fine sand	SM, SP-SM	A-2, A-4   	0	0-2	85-100   	60-100     	30-80	10-40   	10-20	NP - 4     
		27-80	Clay, silty clay, clay loam	CH, CL	<b>A</b> -7   	0	0   	90-100	85-100   	80-100   	70-100   	40-65	20-40
Zippel	2	0-10	  Very fine sandy   loam	ML, CL-ML	A-4 	0	   0 	100	  95-100 	  85-100 	50-75	15-25	NP-5
	       	10-16   	Very fine sand,   very fine   sandy loam,   loamy very   fine sand	CL-ML, ML	<b>A-4</b>     	0	0     	100     	95-100     	85-100     	50-95     	15-25     	NP - 5     
		16-80	Stratified silt   loam to very   fine sand	CL-ML, ML   	   <b>A-4</b>   	0	     	100   	  95-100   	  85-100   	  50-95   	  15-25     	   NP - 5   
1327B:	į		İ	į	į	į	İ	į	į	į	į	į	į
Karlstad	65	0-11   11-14			A-2, A-3	0-5		95-100		75-95  75-95		1 -	NP-4 NP-10
		11-14   14-16	Sandy loam  gravelly sandy	SM, SC, SC-SM	A-2, A-4  A-1, A-2	0-5				75-95  25-50			NP-10  NP-10
			loam  Stratified very   gravelly   coarse sand to	SM, SW-SM SP-SM, SP	A-1, A-2     A-1, A-2	0-5	į	    60-100 	j	į	0-55   	į	    NP-3 

Table 23.--Engineering Index Properties--Continued

Table 23.--Engineering Index Properties--Continued

Map symbol	Percent	Depth	USDA texture	Classif	ication	Frag	ments		rcentage	-	ng	  Liquid	   Plas-
and	of	_	: 			>10	3-10	İ				limit	
component name	map unit		İ	Unified	AASHTO	inches	inches	4	10	40	200	İ	index
		In	İ	İ	İ	Pct	Pct	İ	İ	i İ	i i	Pct	İ
j	İ		İ	į	j	İ	į	İ	į	į	į	į	İ
1327B:													
Marquette	25	0-10	Loamy sand	SP-SM, SC-SM,	A-2 	0 	0-5 	90-100 	85-100 	50-75 	10-35 	0-20 	NP-5 
		10-18	Very gravelly   sandy loam	GC, SC, GM,	A-1, A-2 	0 	0-15 	45-85 	20-55	10-45 	5-35 	0-30	NP-10 
		18-80	Stratified very   gravelly   coarse sand to   very gravelly   sand	SP, SP-SM	A-1, A-3, A-2       	0	0-10       	40-90       	15-90       	0-65	0-30	0-14       	NP       
Sahkahtay	7	0-4	  Sandy loam	SM	  A-2, A-4	   0	   0	  85-100	  80-100	  55-85	25-40	  15-25	  NP-10
zuar	ŕ	4-8	Sand, loamy	1	A-2	0	0		80-100		5-25	0-14	NP
		8-14	sand gravelly sandy loam, sandy clay loam,	  CL, SC   	  A-6 	   0 	   0-5 	  80-100   	  75-98   	  50-85   	  40-60 	  30-40   	  10-20 
		14-80	loam  Loamy sand,   sand, gravelly   coarse sand	  SW, SM, SW-SM   	  A-1, A-2-4   	   0 	   0-5   	  55-90   	  50-85   	  15-60   	   2-20   	   0-14   	   NP   
Redby	3	0-3	Loamy fine sand	SM	  A-2, A-3	0	0	100	95-100	  85-95	5-25	0-20	  NP-3
			Fine sand, sand		A-2, A-3	0	0	100	95-100		5-35	0-20	NP-3
j	į	28-80	Fine sand, sand	SP, SP-SM	A-2, A-3	0	0	100	95-100	80-95	2-12	0-14	NP
1328: Northwood,			   	   	   	   	   	   	   	   	   	   	   
wooded	90	0-15	1	1	A-8	0	0-5						
		15-21	Fine sandy   loam, loamy   fine sand,   loamy sand	SM, SC-SM     	A-2, A-4   	0   	0-3   	95-100     	90-100     	51-85     	15-50     	0-35     	NP-10     
		21-39	Coarse sand,   fine sand,   loamy fine   sand	SP-SM, SM   	A-3, A-2   	0   	0-3   	95-100     	80-100     	70-95     	5-35     	0-14     	NP   
		39-80	Loam, clay   loam, fine   sandy loam	  ML, CL-ML, CL   	<b>A-4, A-6</b>   	0-1	1-5     	95-100     	90-100     	75-100     	50-80     	20-40	3-20

Table 23.--Engineering Index Properties--Continued

Map symbol	   Percent	Depth	USDA texture	Classif	ication	Frag	ments		rcentago sieve no	_	ng	  Liquid	   Plas-
and	of	-	İ		1	>10	3-10	İ				limit	ticity
component name	map unit		İ	Unified	AASHTO	inches	inches	4	10	40	200	İ	index
		In		 	 	Pct	Pct					Pct	
1328:	İ		İ			İ	ĺ	ĺ	ĺ	İ	ĺ	ĺ	İ
Berner, wooded	5	0-20	Muck	PT	A-8	0	0-5						
		20-44	Sand, loamy   sand, fine   sand	SP, SM, SP-SM   	A-2, A-3   	0   	0-2   	90-100   	70-100   	60-80   	0-25   	0-20   	NP-3 
		44-80	Loam, fine sandy loam, silt loam	CL-ML, CL	A-4, A-6   	0-1	1-5   	95-100	85-100   	60-90	50-80	20-40	5-20
Grygla	   5	0-6	Loamy fine sand	SC-SM SM	  A-2	0	   0	100	   100	  85-95	  15-35	  15-25	  NP-7
017910			Sand, fine   sand, loamy	SC-SM, SP-SM,	1	0	0-1		90-100			15-20	1
		26-80	fine sand  Loam, fine   sandy loam,   silt loam	  CL-ML, CL   	  A-4, A-6   	0-1	   0-5   	  95-100   	  80-100   	  70-85   	  50-70   	  20-40   	5-20
1333:			I I	 	 		 	 	 		 	 	
Dora, wooded	   90	0-8	Muck	  PT	  A-8	0	0-5	 	 				
		8-26		1	A-8	0	0-5						
		26-80	Silty clay   loam, silty   clay, clay	CH, CL   	A-7 	0	0	100   	100   	90-100   	90-100   	45-80	35-50
Lupton	   4	0-16	Muck	   PT	  A-8	0	  10-30	 	 	 	 	 	
lapton	-	16-80	1	PT	A-8		10-30						
Wildwood	4	0-12	  Muck	  PT	  A-8	0	   0	 	 	 	 	 	
	 	12-33	Clay, silty   clay, silty   clay loam	CH   	A-7   	0   	0   	100   	100   	95-100   	;   		50-65   
		33-80	Clay, silty   clay	CH 	A-7 	0	0 	100 	85-100 	85-100 	60-95 	65-90 	40-65

Table 23.--Engineering Index Properties--Continued

Map symbol	Percent	Depth	USDA texture	Classif	ication	Fragi	ments		rcentag	e passi: umber	ng	  Liquid	   Plas-
and component name	of map unit		l I	Unified	AASHTO	>10	3-10	   4	10	40	200	limit	ticity  index
	map dire	In			AADII10	Pct	Pct	-	10	40	200	Pct	Index
			į	į	į	İ		ĺ	ĺ	İ			į
1333: Auganaush	   2	0-5	Loam	CL-ML, CL	  A-4, A-6	   0	   0-3	  95-100	  85-95	  85-95	  60-90	20-40	   5-15
	-   		Loam, fine   sandy loam,   silt loam	CL-ML, SM,   SC-SM, ML	A-4 	0		95-100     		75-90 		15-30 	
	 	7-18	Clay, clay   loam, silty   clay loam	CL, CH   	A-7   	0   	0-3   	95-100   	85-95   	85-95   	70-90   	45-70   	25-45   
		18-58	Clay loam,   silty clay   loam, silty   clay	CL, CH     	A-6, A-7   	0-1   	1-5     	95-100     	85-95     	80-95     	60-90     	35-55     	15-30     
		58-80	Loam, clay loam, silty clay loam	CL-ML, CL   	A-6, A-7   	0-1	1-5   	  90-100   	85-95   	60-90   	55-85   	25-45	5-20   
1356:			<u> </u>		 		 	l I	l I		İ		
Water, miscellaneous.			 	 	 	   	   	 	 	 	 		 
1399B:	i				İ	İ	İ	İ	İ	İ	İ	İ	İ
Two Inlets	85	0-2 2-4	Loamy sand  Loamy coarse   sand	SM  SM	A-2   A-2	0 0	0-2		85-100  75-100	50-70  35-65		1	NP - 5   NP - 5
		4-17	sand  Loamy coarse   sand	  SP-SM, SM 	  A-1, A-2-4,   A-3	0	   0-3 	  90-100 	  75-95 	  35-65 	   5-15 	  15-25 	  NP-5 
		17-80	Sand, coarse   sand	SP, SP-SM	A-1, A-3 	0	0-5	85-95	75-95	35-75 	2-10		NP 
Wurtsmith	6	0-5	Loamy sand	SM, SP-SM	A-1, A-2	0	0	  75-100	  75-100	40-75	12-30	0-14	NP
		5-45	Sand, coarse   sand	SP, SM, SP-SM	A-1, A-2, A-3	0	0 	75-100 	75-100	40-75	3-30	0-14	NP
		45-80	Sand, coarse   sand	SP-SM, SP, SM	  A-1, A-2, A-3 	0	0	  75-100 	  75-100 	40-70	3-15	0-14	NP
Zimmerman	6	0-6	  Fine sand	SP-SM, SM	  A-2	0	0	100	  95-100	  95-100	10-20	15-20	NP
		6-80	Fine sand,   loamy fine   sand	SM, SP-SM   	A-2, A-3   	0   	0   	100   	95-100   	60-100   	5-20   	0-20   	NP - 5   
Meehan	3	0-8	Loamy sand	SM	  A-1, A-2	0	   0	  90-100	  75-100	  40-90	  15-30	0-14	   NP
		8-31	Sand, loamy   sand, loamy   coarse sand	SP-SM, SP, SM   	A-1, A-2, A-3 	0   	0   	90-100   	75-100   	40-90   	3-30	0-14	NP 
		31-80	Sand, coarse   sand	SP-SM, SP	  A-1, A-2, A-3 	0	0	  90-100 	75-100	40-90	0-5	0-14	NP

Map symbol	Percent	Depth	USDA texture	Classif:	ication	Fragi	ments		rcentag sieve n	e passi: umber	ng	  Liquid	   Plas
and	of					>10	3-10					limit	ticit
component name	map unit		<u> </u>	Unified	AASHTO	inches	inches	4	10	40	200		index
	ļ	In				Pct	Pct					Pct	ļ
1401	ļ												
1401: Grygla,	I		İ	l I	 		 	l I	 	 	 		l I
depressional	90	0-5	  Mucky loamy	SC-SM, SM	  A-2	0	l l 0	100	100	  85-95	  15-35	0-25	NP-10
depressionar	]	0 5	fine sand			Ü	İ	100	100		13 33	0 23	
	İ	5-36	1	SC-SM, SM,	A-2, A-3	0	0-1	95-100	90-100	70-95	5-35	0-20	NP-5
j	ĺ		sand, loamy	SP-SM	j			ĺ	ĺ				Ì
			fine sand										
	ļ	36-80	Loam, fine	CL-ML, CL	A-4, A-6	0-1	0-5	95-100	80-100	70-85	50-70	20-40	5-20
	ļ		sandy loam,										
	ļ		silt loam										
Northwood,	I		l I	 	 		 	 		 			
wooded	5 l	0-15	Muck	   PT	  A-8	0	   0-5	 		l I	 		
wooded	J		1	1	A-2, A-4	0	0-3		90-100	l	l	1	NP-10
	i		loam, loamy		,	· ·							
	i		fine sand,				İ	İ	i	İ		i	i
j	İ		loamy sand	į	j i		j	j	į	j	İ	j	į
	I	21-39	Coarse sand,	SM, SP-SM	A-3, A-2	0	0-3	95-100	80-100	70-95	5-35	0-14	NP
	I		fine sand,										
	ļ		loamy fine										
			sand										
	ļ	39-80		ML, CL, CL-ML	A-4, A-6	0-1	1-5	95-100	90-100	75-100	50-80	20-40	3-20
	I		loam, fine sandy loam	l I	 		 	l I	 	 	 		l I
	l I		sandy loam	 	 		 	l I	 	 	 	l l	1
Chilgren	3	0-5	Fine sandy loam	ML, SC-SM,	  A-2, A-4	0-1	0-3	90-100	85-100	60-85	25-55	15-35	NP-10
J	İ		i	CL-ML, SM	İ		İ	İ	i	İ		i	İ
j	İ	5-9	Loamy sand,	ML, SM, CL-	A-2, A-4	0-1	0-3	75-100	70-100	50-85	15-55	15-35	NP-10
			loamy fine	ML, SC-SM									
	ļ		sand, fine										
	ļ		sandy loam										
	ļ	9-16	Clay loam,		A-4, A-6, A-7	0-1	1-5	75-100	70-100	60-95	35-85	25-50	7-20
	I		loam, sandy	ML	 		 	 		 			
	l I	16-80	clay loam	  ML, SC, CL,	  A-4	0-1	   2-5	   75_100	  70-100	  50-90	  35-70	20-30	3-10
	I	10-00	loam, fine	SM	1	0-1	2-3	73-100 	70-100	50-50	33-70	20-30	3-10
	i		sandy loam				i İ	İ	i	i İ	! 	i	İ
	į		į	j	j i		į	į	į	j	İ	İ	į
Grygla	2	0-6	Loamy fine sand	SM, SC-SM	A-2	0	0	100	100	85-95	15-35	15-25	NP-7
		6-26	Sand, fine		A-2, A-3	0	0-1	95-100	90-100	70-95	5-35	15-20	NP-5
			sand, loamy	SP-SM	<u> </u>			ļ				ļ	ļ
	ļ		fine sand										
		26-80	!	CL-ML, CL	A-4, A-6	0-1	0-5	95-100 	80-100	70-85	50-70	20-40	5-20
	l I		sandy loam,	 	 		 	 	 	 	 	1	I I
	ļ		siit loam	I	ı		I	I	I	I	I	I	!

Table 23.--Engineering Index Properties--Continued

Table 23.--Engineering Index Properties--Continued

Map symbol	   Percent	Depth	USDA texture	Classif:	ication	Fragi	ments		_	e passi: umber	ng	  Liquid	   Plas-
and	of	_	į		1	>10	3-10	į				limit	ticity
component name	map unit		Ì	Unified	AASHTO	inches	inches	4	10	40	200	İ	index
		In	]			Pct	Pct					Pct	
1402:				 	 			 			 		
Leafriver,													
wooded	90	0-10	Muck	PT	A-8	0	0-5						
		10-13	Loamy sand,   sandy loam,   fine sand	<b>SM</b>   	A-2-4, A-4   	0   	0   	100   	95-100   	55-80   	15-40   	15-20 	NP - 4   
	i	13-80		SP, SP-SM, SM	A-1-b. A-2.	0	0	95-100	80-100	45-70	3-35	i	NP
			fine sand,   sand		A-2-4, A-3								 
Cormant	4	0-6	Loamy fine sand	SM, SP-SM	  A-2, A-3, A-4	l I 0	0	100	100	80-100	   5-40	0-14	   NP
		6-80		SP, SP-SM, SM		0	0	100	100	75-100   		0-14	NP 
Tawas	   4	0-10	Muck	   PT	  A-8	   0	   1-10	 	 		 		
	i i	10-27	Muck, mucky	PT	A-8	,   0 	0-10	j I	j I	j I	 		j I
		27-80	Fine sand,   sand, loamy   sand	SM, SP, SP-SM	A-2-4, A-3	0   	0	80-100   	60-100   	50-75	0-20	0-14	NP   
Redby	2	0-3	Loamy fine sand	  SM	  A-2, A-3	0	0	100	95-100	85-95	5-25	0-20	NP-3
_	į į	3-28	Fine sand, sand	SM, SW-SM	A-2, A-3	0	0	100	95-100	80-95	5-35	0-20	NP-3
		28-80	Fine sand, sand	SP-SM, SP	A-2, A-3	0	0	100	95-100	80-95	2-12	0-14	NP
1404:			 	 	 	 	 	l I	 	 	 		 
Berner, wooded	90	0-20	Muck	PT	A-8	0	0-5						
		20-44	Sand, loamy   sand, fine   sand	SP-SM, SM, SP	A-2, A-3 	0	0-2	  90-100   	70-100   	60-80   	0-25	0-20	NP - 3 
		44-80	Loam, fine sandy loam, silt loam	CL-ML, CL   	A-4, A-6   	0-1   	1-5     	95-100     	85-100     	60-90     	50-80   	20-40	5-20     
Lupton	4	0-16	Muck	PT	A-8	0	10-30						
i	i	16-80	Muck	PT	A-8	i 0	10-30	i	i	i	i	i	

Map symbol	   Percent	Depth	USDA texture	Classif	ication	Fra	gments		rcentag sieve n	_	ng	  Liquid	   Plas
and	of	_	İ			>10	3-10	İ				limit	ticit
component name	map unit		İ	Unified	AASHT	O inche	sinches	4	10	40	200	Ï	index
		In	ĺ	l	Ī	Pct	Pct	İ	Ī	I		Pct	[
1404:	 		 	 	 			 		 			 
Northwood,	i i			l I	 	İ	1	İ		 	i I	i	i
wooded	4	0-15	Muck	PT	A-8	0	0-5						
	i - i		Fine sandy		A-2, A-4		1	95-100	90-100	51-85	15-50	0-35	NP-10
	i i		loam, loamy	İ	İ	i	i	i	İ	İ	İ	İ	İ
	i i		fine sand,	İ	İ	į	j	į	İ	į	İ	İ	İ
	į į		loamy sand	ĺ	ĺ	į	İ	İ	İ	ĺ	ĺ	İ	İ
		21-39	Coarse sand,	SP-SM, SM	A-3, A-2	0	0-3	95-100	80-100	70-95	5-35	0-14	NP
			fine sand,										
			loamy fine										
			sand										
		39-80		CL, CL-ML, ML	A-4, A-6	0-1	1-5	95-100	90-100	75-100	50-80	20-40	3-20
	 		loam, fine sandy loam	l I	 		-	 	 	 	 		l I
	 		Sandy IOam	 	 		-	 	 	 	i i	İ	i i
Grygla	1 2 1	0-6	Loamy fine sand	SM, SC-SM	A-2	0	0	100	100	85-95	15-35	15-25	NP-7
15	i i		Sand, fine	SP-SM, SM,	A-2, A-3	0	0-1	95-100	90-100			15-20	1
	i i		sand, loamy	SC-SM	İ	i	j	į	İ	į	į	İ	İ
			fine sand										
		26-80	Loam, fine	CL-ML, CL	A-4, A-6	0-1	0-5	95-100	80-100	70-85	50-70	20-40	5-20
			sandy loam,										
			silt loam				ļ	!			!	!	
1405:	 		 	 	 								
Lallie		0-8	  Mucky silt loam	l CT.	  A-6	0	0	100	100	   95-100	  70-95	30-40	10-20
	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		Silty clay		A-6, A-7		0	100	1			35-95	1
	i i		loam, silty				1						
	i i		clay		İ	į	i	i	İ	İ	İ	i	İ
	į į		İ	ĺ	ĺ	İ	ĺ	İ	İ	ĺ	ĺ	Ì	ĺ
Sax	7	0-15	1	1	A-8	0	0						
		15-24		CL, CL-ML	A-4, A-6	0	0	100	100	90-100	60-85	20-40	5-15
			loam, silt										
			loam, silty										
	 	24 20	clay loam  Silt loam,	CL, CL-ML	  A-4, A-6	0	   0	100	100	  90-100	   60 0E		   5-15
	 	24-33	silty clay	СБ, СБ-МБ	A-4, A-0		0	1 100	1 100	30-100	00-05	20-40	2-13
	 		loam	 	 		-	 	 	 	i i	İ	i i
	i i	39-71	1	ML, CL, CL-ML	A-4, A-6		0	100	100	90-100	50-90	16-40	  NP-15
	i i		silty clay	İ	İ	į	i	i	İ	İ	İ	i	İ
	į į		loam, very	İ	j	į	j	İ	İ	İ	į	İ	İ
	l İ		fine sandy										
			loam			I					[		
	ļ ļ	71-80		CL, CH	A-7	0	0	100	100	90-100	75-95	40-80	15-50
	<u> </u>		loam, silty			ļ	ļ						
			clay, clay			1	1						

Table 23.--Engineering Index Properties--Continued

Table 23.--Engineering Index Properties--Continued

Map symbol	Percent	Depth	USDA texture	Classif	ication	Fragi			rcentago sieve n	_	ng	  Liquid	
and component name	of map unit			Unified	AASHTO	>10  inches	3-10	   4	10	40	200	limit	ticity
		In	İ			Pct	Pct					Pct	
1405:								 					
Wabanica	3	0-8 8-19	Silt loam  Silt loam,   silty clay   loam	CL, CL-ML  CL-ML, CL   	A-4, A-6  A-4, A-6 	0   0 	0   0 	100   100 	95-100  95-100 	95-100  85-100   		1	5-15   5-15 
		19-80	Silt loam,   silty clay   loam	CL-ML, CL   	A-4, A-6   	0	     	   100   	  95-100   	  85-100   	60-95   	25-40	   5-15   
1414: Nereson, very			 	   			   	   	   	   	   		   
cobbly	85	0-7	Fine sandy loam	SM	A-4	0-2	1-5	90-100	80-98	50-70	35-50	15-20	NP-4
-		7-11	Loam, fine sandy loam, sandy loam	CL-ML, CL, SC, SC-SM	A-4   	0-1	0-5   	90-100   	80-98   	  55-90   	40-60   	20-28	5-10   
		11-29	Sandy loam,   loam, gravelly   loam	CL, CL-ML,   ML, SC-SM,   SM	A-4   	0-1	1-5   	85-95   	75-95   	45-85   	10-55   	15-30   	NP-10   
		29-80	Sandy loam,   loam, gravelly   loam	SM, SC-SM,   ML, CL-ML,   CL	A - 4   	0-1	1-5   	85-95     	75-95     	45-85     	10-55     	15-30   	NP-10     
Percy, very				İ	İ	i	İ	İ	İ	İ	İ	İ	i
cobbly	10	0 - 8	Loam	SC-SM, SC,	A-4, A-6	0-2	1-5	90-100	85-100	70-95	35-70	20-40	5-15
		8-23	Loam, fine sandy loam, sandy loam	CL-ML, CL   	A-4 	0-1	1-5   	85-100   	85-98   	55-90   	35-70   	20-30	5-10   
		23-80	Loam, fine   sandy loam,   sandy loam	SC-SM, CL-ML, SC, CL	A-4   	0-1	1-5   	85-100     	85-98     	  55-90     	35-70     	15-30   	5-10     
Pelan	3	0-6 6-12	Sandy loam  Very gravelly   sandy loam,   very gravelly   sandy clay   loam	SC-SM, SM  GC, SC, SM,   GM 	A-2, A-4  A-1, A-2 	0 0			75-100  25-50 			0-20	
		12-24	Yery gravelly   coarse sand,   very gravelly   fine sandy   loam	  GP-GM, SP-SM,   GP, SP   	  A-1, A-2     	0	   2-5   	  40-85     	  25-50     	   5-50     	   1-10     	   0-14     	   NP     
		24-60	Fine sandy   loam, sandy   loam, loam	  SC, SM, CL,   ML 	A-4, A-6   	0-1	   1-5   	  90-100   	  85-95   	60-90   	40-65	10-30	   1-15   

Map symbol	   Percent	Depth	USDA texture	Classif:	ication	Frag	ments		rcentag sieve n	-	ng	  Liquid	   Plas
and	of					>10	3-10					limit	ticit
component name	map unit			Unified	AASHTO	inches	inches	4	10	40	200		index
		In			[	Pct	Pct		[			Pct	
1414:													
Foxhome	   2	0-10	  Sandy loam	SM	  A-4	0	0-2	   05_100	  90-100	   75_90	  35-50	15-30	  NP-5
roxilome	<b>2</b>		Fine sand,		A-2, A-3	0-1	0-2		90-100		5-35		NP-5
		10-13	loamy fine   sand, sand		<b>A-2, A-3</b>   	0-1	0-3			70-83	3-33	0-23	
	 	15-23	1	SP-SM, GP,	  A-1	0	2-5	  30-65	  15-45	   5-40	   0-10	0-20	   NTD_1
		13-23	very gravelly coarse sand, very gravelly	GP-GM, SP			2-3			J-40   	0-10	0-20	
		02.00	loamy sand										
		23-80	Loam, clay   loam, silt   loam	CL, CL-ML, ML   	A-4, A-6   	0-1   	1-5   	   	85-100   	75-90   	50-80	20-40	1-15   
1428:	 			 						 	 		
Karlsruhe	85	0 - 8	Sandy loam	SC, SC-SM, SM	A-4, A-2	0	0	95-100	85-100	60-90	30-65	0-35	NP-15
	 	8-16	Sandy loam,   loamy sand	SC, SC-SM, SM	A-2, A-4, A-1 	0 	0 	95-100 	85-100 	45-75 	10-40 	0-35	NP-15 
	     	16-80	Coarse sand,   gravelly   coarse sand,   gravelly sand	SM, SP, SP-   SM, GP, GP-   GM 	A-1, A-2, A-3     	0     	0-5     	45-90     	30-80     	20-70     	0-15     	0-20     	NP     
Syrene	   10	0-11	  Sandy loam	SC, SC-SM, SM	   A - 4	0	0-3	  95-100	  85-100	  55-70	  35-50	15-35	  NP-10
2/20110			Loam, sandy   loam, sandy   clay loam		A - 4 	0	0-3   		85-100   				1-10   
		19-80	Stratified   gravelly   coarse sand to   loamy fine   sand	İ	A-1, A-2, A-3 	0       	2-5       	75-95       	55-80       	30-60       	0-10     	5-20       	NP-5       
Ulen	5	0-10	Fine sandy loam	SM, SC, SC-SM	  A-4	0	0	100	100	80-100	35-50	0-25	NP-8
		10-16	Loamy fine sand, fine sand	<b>SM</b> 	A-2 	0   	0   	95-100   	95-100   	70-95   	12-35   	0-14	NP 
	į i	16-67	Fine sand	SM, SP-SM	A-2, A-3	0	0	100	95-100	80-100	5-35	0-14	NP
	į į	67-80	Very fine sandy	•	A-4	0	0	100	95-100	70-95	35-60	20-30	NP-10
	i 		loam, fine sandy loam	SM, CL-ML	 	i I	i I	 	   	 	 	İ İ	

Table 23.--Engineering Index Properties--Continued

Table 23.--Engineering Index Properties--Continued

Map symbol	Percent	Depth	USDA texture	Classif	ication		nents		_	e passi: umber	ng		   Plas-
and	of					>10	3-10		1	1	1	limit	ticity
component name	map unit		1	Unified	AASHTO	Pct	inches   Pct	4	10	40	200	<u> </u>	index
		In	 	 	 	PCt	PCt 		 	 	 	Pct	 
1444:			İ				! 		! 	İ			<u> </u>
Wurtsmith	85	0-5	Loamy sand	SM, SP-SM	A-1, A-2	0	0	75-100	75-100	40-75	12-30	0-14	NP
		5-45	Coarse sand,   sand	SM, SP-SM, SP	A-1, A-2, A-3  	0	0 	75-100 	75-100 	40-75 	3-30	0-14	NP
		45-80	Coarse sand,   sand	SP-SM, SM, SP	A-1, A-2, A-3 	0	0   	75-100 	75-100 	40-70	3-15	0-14	<b>NP</b> 
Meehan	10	0-8	Loamy sand	  SM	A-1, A-2	0	0	  90-100	  75-100	40-90	15-30	0-14	NP
		8-31	Sand, loamy   sand, loamy   coarse sand	SP, SP-SM, SM 	A-1, A-2, A-3 	0	0   	90-100   	75-100   	40-90   	3-30	0-14	<b>NP</b> 
		31-80	Sand, coarse   sand	SP-SM, SP 	A-1, A-2, A-3 	0	0	90-100	75-100 	40-90 	0-5	0-14	NP   
Clearriver	2	0-2	Loamy fine sand	SP-SM, SM	A-2	0	0	95-100	85-100	40-90	10-35	15-25	NP-10
	İ	2-21	Sand, loamy   sand	SM, SP-SM	A-2, A-3	0	0	95-100	85-100	55-90 	5-35		NP
		21-80	Stratified fine   sand to   gravelly   coarse sand	SP, SP-SM	A-1, A-2, A-3   	0	0-2	75-100   	65-85     	40-65     	0-10	     	NP     
Two Inlets	2	0-2	Loamy sand	  SM	A-2	0	0-2	  90-100	85-100	50-70	15-30	15-20	NP-5
	į	2-4	Loamy coarse	SM	A-2	0	0-2	90-100	75-100	35-65	5-15	15-20	NP - 5
	į	4-17	Loamy coarse	SM, SP-SM	A-2-4, A-3, A-1	0	0-3	90-100	75-95	35-65	5-15	15-25	NP - 5
		17-80	Sand, coarse   sand	SP-SM, SP	A-1, A-3 	0	0-5	85-95	75-95	35-75	2-10	   	NP 
Cormant	1	0 - 6	Loamy fine sand	SP-SM, SM	A-4, A-2, A-3	0	0	100	100	80-100	5-40	0-14	NP
		6-80	Fine sand,   sand, loamy   fine sand	SM, SP-SM, SP	A-2, A-3   	0	0	100	100   	75-100   	1-20	0-14	NP   
1448:			 	 	 		 		 	 	 		 
Grano	90	0-13	Clay	CH, CL	A-7	0	0	95-100	90-97	80-95	70-95	45-80	20-50
		13-54	Silty clay   loam, silty   clay, clay	CH, CL   	<b>A-7</b>   	0	0   	95-100   	90-97   	80-95   	70-95   	40-80   	20-50   
		54-80		CH, CL         	<b>A-7</b>       	0	0     	95-100	90-100	80-97       	75-95       	40-80       	20-50

Map symbol	   Percent	Depth	USDA texture	Classif	ication	_i	ments		rcentag sieve n	_	ng	  Liquid	
and component name	of     map unit			Unified	AASHTO	>10	3-10		10	40	200	limit	ticity
Component name	map dire	In			AASHIO	Pct	Pct	-	10	40	200	Pct	Index
1448:				 		[	 	 	 	 	 	 	
Percy	5	0-10	Loam	SC, CL-ML,	A-4, A-6	0-1	0-3	90-100	  85-100 	70-95	35-70	20-40	5-15
		10-25	Loam, fine sandy loam, sandy loam	CL, CL-ML	A-4 	0-1	1-5 	85-100	85-98	55-90 	35-70	20-30	5-10
		25-80		SC, CL, SC- SM, CL-ML	A-4   	0-1	   1-5   	  85-100   	  85-98   	  55-90   	  35-70   	  15-30   	5-10
Augsburg	3	0-9	Loam	  ML, CL-ML, CL	A-4, A-6	0	0	100	100	  95-100	  50-90	15-40	NP-15
		9-33	Loam, very fine   sandy loam,   silt loam	<b>ML</b>   	A-4 	0	0   	100 	100   	95-100   	80-90 	15-30   	NP-10 
		33-80	Silty clay,   clay, silty   clay loam	   CH 	  A-7   	0	0   	  95-100   	  95-100   	  95-100   	  95-100   	  45-85   	25-65
Woodslake	2	0-8	Clay	MH, CH	  A-7	0	0	100	98-100	  90-100	  85-98	  50-65	20-35
			Clay		A-7	0		95-100					35-50
			Clay  Clay, silt   loam, silty   clay loam		A-7  A-6, A-7 	0   0 	0   0 	95-100   100 	95-100   100 	90-100  90-100 			35-50  20-40 
1449:			 	 			 	l I		 	 	 	
Grano	90	0-11	Loam	SC-SM, CL-ML	A-4, A-6	0	0	95-100	90-97	65-85	45-65	20-35	5-15
		11-41	Silty clay   loam, silty   clay, clay	CL, CH   	A-7   	0   	0   	95-100   	90-97   	80-95   	70-95   	40-80   	20-50
		41-80	Clay, silty   clay, silty   clay loam,   stratified   silt loam to   clay	CH, CL	A-7         	0	0         	95-100         	90-100         	   80-97         	75-95           	40-80         	20-50
Percy	5	0-10	  Loam 	  SC-SM, CL,   SC, CL-ML	A-4, A-6 	0-1	į	  90-100 	į	į	İ	į	5-15
		10-25	Loam, fine   sandy loam,   sandy loam	CL, CL-ML   	A-4   	0-1   	1-5   	85-100   	85-98   	55-90   	35-70   	20-30   	5-10   
		25-80	Loam, fine sandy loam, sandy loam	SC-SM, CL-ML, CL, SC	<b>A-4</b> 	0-1	   1-5   	85-100   	85-98   	55-90   	35-70   	15-30   	5-10

Table 23.--Engineering Index Properties--Continued

Table 23.--Engineering Index Properties--Continued

Map symbol	Percent	Depth	USDA texture	Classif	ication	Fragi	ments		rcentag sieve n	e passi: umber	ng	  Liquid	   Plas-
and	of	_	İ		1	>10	3-10	i				limit	ticity
component name	map unit			Unified	AASHTO	inches	inches	4	10	40	200		index
		In				Pct	Pct					Pct	
1449:													
Augsburg	3	0 - 9	Loam	ML, CL-ML, CL		0	0	100	100	95-100		15-40	
   		9-33	Loam, very fine   sandy loam,   silt loam	ML   	A-4   	0	0   	100   	100   	95-100   	80-90   	15-30   	NP-10   
 		33-80	Silty clay,   clay, silty   clay loam	CH   	<b>A-7</b>   	0	0   	  95-100   	  95-100   	95-100     	95-100   	45-85   	25-65   
Woodslake	2	0 - 8	Clay	CH, MH	  A-7	0	0	100	  98-100	90-100	85-98	50-65	20-35
j	j	8-15	Clay	CH	A-7	0	0	95-100	95-100	90-100	85-100	60-85	35-50
ĺ	ĺ	15-36	Clay	CH	A-7	0	0	95-100	95-100	90-100	85-100	60-85	35-50
 		36-80	Clay, silt   loam, silty   clay loam	CL, CH   	A-6, A-7   	0   	0   	100   	100   	90-100   	70-95   	40-65   	20-40
1807:	i			 	 			 	 				 
Cathro, ponded	90	0-19	Muck	PT	A-8	0	0						
 		19-80	Sandy loam,   silt loam,   clay loam	SC, CL, SC-	A-4, A-6   	0-1	0-5   	80-100   	65-100   	60-100   	35-90   	20-40   	4-20   
Haug	4	0-10	Muck	PT	A-8	0	0				i		
   		10-16	Mucky sandy   loam, fine   sandy loam,   loam	SM, ML, OL,   CL   	A-4, A-6   	0-1   	0-3   	95-100     	90-100     	70-85     	35-65     	15-40     	1-15     
 		16-80	Loam, sandy loam, fine sandy loam	SC, ML, CL,	A-4, A-6   	0-1	1-5   	  95-100   	70-100   	60-95     	35-65   	15-40   	1-15   
Seelyeville,					İ	İ		İ	! 		İ		
ponded	4		Muck	PT	A-8	0	0						
		18-80	Mucky peat,   muck	PT   	A-8 	0	0	   	   		   		
Percy	2	0 - 8	  Loam 	SC, CL-ML, CL, SC-SM	  A-4, A-6 	0-2	   1-5 	  90-100 	  85-100 	  70-95 	  35-70 	20-40	   5-15 
   		8-23	Loam, fine sandy loam, sandy loam	CL, CL-ML   	A-4 	0-1	1-5   	85-100   	85-98   	55-90   	35-70   	20-30	5-10   
   		23-80	Loam, fine sandy loam, sandy loam	SC, CL, CL- ML, SC-SM	A-4 	0-1	1-5   	85-100   	85-98   	55-90   	35-70   	15-30   	5-10   

Table 23.--Engineering Index Properties--Continued

Map symbol	   Percent	Depth	USDA texture		Classif	ication	Frag	ments		rcentago sieve n	_	ng	  Liquid	   Plas-
and	of	Depen	ODDII CORCUIC	l		l	>10	3-10	i	DICVC II	umb c i		limit	
component name	map unit			i	Unified	AASHTO		inches	4	10	40	200		index
		In	<u> </u>				Pct	Pct	-				Pct	
1808:														
Markey, ponded	   90	0-17	Muck	PT		  A-8	0	0						
markey, ponded	90         		Muck   Fine sand,   loamy sand,   coarse sand	1	SM, SP-SM		0	0   0	100     	  75-100   	1	   0-20   	   	NP   NP 
Leafriver	   4	0-13	Muck	PT		  A-8	0	0						
		13-80	Loamy sand,   fine sand,   sand	SP,   	SP-SM, SM	A-2-4, A-3,   A-1-b, A-2	0	0	95-100   	80-100   	45-70   	3-35	     	NP   
Seelyeville,						 								
ponded	4	0-18	Muck	PT		A-8	0	0						
		18-80	Mucky peat,   muck	PT 		A-8 	0	0						
Cormant	2	0 - 6	Loamy fine sand	  SP-	SM, SM	  A-2, A-3, A-4	0	0	100	100	  80-100	5-40	0-14	NP
		6-80	Fine sand,   sand, loamy   fine sand	SM,   	SP-SM, SP	A-2, A-3   	0   	0   	100	100	75-100   	1-20	0-14	NP
1918:						 								
Croke	85   	0-12	Very fine sandy   loam	ML,	CL, CL-ML	A-4 	0	0	100 	100 	85-100 	50-95 	15-35 	NP-10 
		12-21	Very fine sandy   loam, silt   loam, loamy   very fine sand	į Į	CL, CL-ML	<b>A-4</b>   	0   	0   	100     	100     	85-100     	80-95     	15-35     	NP-10     
		21-80	Clay, silty clay, silty clay loam	CH,     	CL	<b>A-7</b>   	0	0   	100   	100   	95-100     	90-100     	40-75   	20-45
Augsburg	13	0 - 9	Loam	CL,	CL-ML, ML	A-4, A-6	0	0	100	100	95-100	50-90	15-40	NP-15
		9-33	Loam, very fine sandy loam, silt loam	ML   		<b>A-4</b> 	0	0	100   	100   	95-100   	80-90   	15-30   	NP-10   
		33-80	Silty clay,   clay, silty   clay loam	CH 		<b>A-7</b> 	0	0   	95-100   	95-100	95-100	95-100   	45-85   	25-65

Table 23.--Engineering Index Properties--Continued

Map symbol	   Percent	   Depth	USDA texture	Classif	ication	Fragi	ments		rcentag	_	_		   Plas-
and	of					>10	3-10					limit	ticity
component name	map unit			Unified	AASHTO		inches	4	10	40	200		index
		In				Pct	Pct					Pct	
1918:	 	 		 		 	 	 	 	l I			 
Grano	2	0-11	Loam	CL-ML, SC-SM	A-4, A-6	0	0	95-100	90-97	65-85	45-65	20-35	5-15
			Silty clay	CL, CH	A-7	0	1	95-100		80-95		40-80	
		 	loam, silty clay, clay		į į	j I	 	j I	j I	į į	į į	İ	i I
	İ	41-80	Clay, silty	CL, CH	A-7	0	0	95-100	90-100	80-97	75-95	40-80	20-50
	İ	j	clay, silty	İ	İ	İ	į	į	į	İ	İ	į	į
			clay loam,										
			stratified										
			silt loam to										
			clay										
1923B:	 	 											
Garnes, very			1-										
stony	85	0-6	Loam  Clay loam,	ML, CL-ML CL, SC	A-4 A-4, A-6	1-3   0-1			85-100  80-100			20-35	1-10   7-20
	 	6-13	sandy clay	CL, SC	A-4, A-6	0-1	0-3	  95-100		/0-100	45-80	20-40	7-20 
		İ	loam		İ	i	İ	i	i	İ	İ	i	i
	İ	13-80	Loam, fine	ML, CL, SC,	A-4, A-6	0-1	1-5	95-100	75-95	60-90	35-65	15-40	1-15
	ĺ		sandy loam,	SM		ĺ	İ	İ	İ	İ	İ	İ	ĺ
			sandy loam	[		[		[				[	
Chilgren	   10	   0-5	  Fine sandy loam	GC_GM MT	  A-2, A-4	   0-1	0-3	   00-100		  60-85	25-55	  15-35	   NTD _ 1.0
CHITGLEH	10	0-3 	rine sandy loam	SM, CL-ML	A-2, A-1	0-1	0-3	30-100	83-100	00-83	23-33	13-33	NF - 10 
		   5-9	Loamy sand,	SM, ML, CL-	A-2, A-4	0-1	0-3	  75-100	70-100	50-85	15-55	15-35	  NP-10
			loamy fine	ML, SC-SM									
	İ	İ	sand, fine	İ		İ	İ	i	i	İ	i	i	İ
	İ	j	sandy loam	İ	İ	İ	į	į	į	İ	İ	į	į
		9-16	Clay loam,	CL, SM, ML,	A-4, A-6, A-7	0-1	1-5	75-100	70-100	60-95	35-85	25-50	7-20
			loam, sandy	SC									
			clay loam										
		16-80	Loam, sandy	ML, SM, CL,	A-4	0-1	2-5	75-100	70-100	50-90	35-70	20-30	3-10
	l I	 	loam, fine   sandy loam	SC		 	 	 		 			 
		 	sandy loam	 		 	 	 	 	l l			l I
Eckvoll	3	0-6	Loamy fine sand	SC-SM, SM	A-4, A-2	0	0-2	90-100	85-100	45-80	25-40	15-20	NP-7
		6-21	Fine sand,	SM, SP-SM	A-1, A-2, A-3	0	0-2	90-100	85-100	45-75	5-30	15-20	NP-4
			sand, loamy										
			fine sand										
		21-26	Clay loam,	SC, CL	A-4, A-6, A-7	0	0-5	90-100	85-98	65-95	45-75	25-50	7-25
			sandy clay					!					
		1 26 02	loam, loam	   GT_MT_GT									
	 	∠6-80	Loam, clay   loam, fine	CL-ML, CL	A-4, A-6, A-7	U-I	1-5	  90-T00	85-98	/U-95 	50-80	25-45	5-20
	 	 	sandy loam	 		 	 		1	1	1	 	l I
		l I	Jana, Ioam			Ĭ		i		İ	İ		İ
			1	1	1	1	1	1	1	1	1	1	

Map symbol and	Percent of	Depth	USDA texture	Classif	ication	Fragi	ments 		rcentage sieve n	_	_	  Liquid  limit	   Plas-  ticity
component name	map unit			Unified	AASHTO	1	inches	4	10	40	200		index
	-	In	İ	<u> </u>		Pct	Pct			<u> </u>		Pct	
1923B:			 	 	 	 							
Pelan	2	0-6	Sandy loam	SC-SM, SM	A-2, A-4	0	0-3	95-100	75-100	55-90	30-50	0-20	NP-5
		6-12   	Very gravelly   sandy loam,   very gravelly   sandy clay   loam	GM, SM, GC,   SC   	A-1, A-2       	0     	2-5     	45-85     	25-50     	10-45       	5-35     	20-30     	NP-10       
		12-24     	Very gravelly   coarse sand,   very gravelly   fine sandy   loam	GP, SP-SM,   GP-GM, SP   	A-1, A-2     	0       	2-5     	40-85     	25-50     	5-50     	1-10     	0-14     	NP     
		24-60	Fine sandy   loam, sandy   loam, loam	CL, ML, SC,	A-4, A-6 	0-1   	1-5   	90-100   	85-95     	60-90   	40-65	10-30	1-15   
1984:					İ		 			 			
Leafriver	90	0-13	Muck	PT	A-8	0	0	j	i	i	j	j	j
		13-80   	Loamy sand,   fine sand,   sand	SP, SM, SP-SM   	A-1-b, A-2,   A-2-4, A-3 	0   	0   	95-100     	80-100   	45-70   	3-35   		NP   
Cormant	5	0-6	Loamy fine sand	SM, SP-SM	A-2, A-3, A-4	0	0	100	100	80-100	5-40	0-14	NP
		6-80	Fine sand,   sand, loamy   fine sand	SM, SP-SM, SP	A-2, A-3 	0   	0   	100   	100   	75-100   	1-20	0-14	NP 

Table 23.--Engineering Index Properties--Continued

Markey-----3 0-42 Muck A-8 42-80 | Fine sand, |SM, SP, SP-SM|A-2, A-3 0 0 100 |75-100|60-75 | 0-20 | NP loamy sand, coarse sand Redby-----0-3 | Loamy fine sand | SM A-2, A-3 95-100 85-95 0-20 NP-3 0 100 5-25 3-28 | Fine sand, sand | SW-SM, SM A-2, A-3 0 0 100 |95-100|80-95 5-35 0-20 | NP-3 28-80 | Fine sand, sand | SP, SP-SM A-2, A-3 95-100 80-95 2-12 | 0-14 | NP 100 W:

Water.

Table 24.--Physical Properties of the Soils

(Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer. Absence of an entry indicates that data were not estimated.)

Percent   of   map unit  	Depth	Clay 	Moist     bulk	Permea-	Available	Linear	Organic				erodi-	
		 	Dulk		water	extensi-	matter	1	I	1	bility	1
			density	bility	capacity	bility	Matter	Kw	   Kf	   T	group	
İ	In	Pct	q/cc	In/hr	In/in	Pct	Pct		1(1	<u> </u>	group	I
			3,	•	į į			i	İ	i	i	i
		j	i i		į	İ	İ	į	İ	İ	į	į
85	0-11		1.20-1.50		1		4.0-7.0	.32	.32	5	4L	86
	11-41		1.20-1.50		1		0.0-5.0	.32	.32			
	41-80	18-34	1.30-1.50	0.20-2.00	0.15-0.20	3.0-5.9	0.0-1.0	.32	.32	 		 
5	0 - 7	10-26	1.20-1.40	0.60-2.00	0.20-0.24	3.0-5.9	3.0-7.0	.32	.32	5	4L	86
į	7-32	18-34	1.30-1.50	0.20-0.60	0.16-0.22	3.0-5.9	1.0-4.0	.37	.37	i	į	i
į	32-80	18-34	1.30-1.80	0.06-0.20	0.16-0.22	3.0-5.9	0.0-0.5	.43	.43		į	
5	0-13	   40-60	  1.20-1.50	0.06-0.20	0.13-0.17	   6.0-8.9	   3.0-6.0	.28	   .28	   5	   4	86
-	13-54				1		1.0-3.0	.32	.32	-	i -	
į	54-80	22-60	1.20-1.60	0.06-0.20	0.15-0.18	6.0-8.9	0.0-0.5	.32	.32	İ	į	į
					ļ			!	ļ		[	ļ
5					1			1	1	5	2	134
					1							
					1							
l I	71-80				1		0.0-0.5	.43	.43	 	 	
į					į			į	į	į	į	į
										! _		
85					1					5	1	250
					1							
	22-80	1-10	1.55-1.70  	6.00-20	0.05-0.08	0.0-2.9 	0.0-0.5	.15	.15	 	 	
7	0-3	2-10	1.40-1.60	6.00-20	0.08-0.12	0.0-2.9	0.5-2.0	.17	.17	5	2	134
j	3-28	1-8	1.55-1.70	6.00-20	0.07-0.10	0.0-2.9	0.0-0.5	.17	.17	ĺ	İ	ĺ
	28-80	0-6	1.55-1.70	6.00-20	0.06-0.08	0.0-2.9	0.0-0.5	.17	.17			
3	0-2	   5-15	  1.40-1.60	6.00-20	0.10-0.12	   0.0-2.9	1.0-2.0	1.17	   .17	   5	   2	134
i	2-21	3-10	1.55-1.70	6.00-20	0.06-0.11	0.0-2.9	0.0-0.5	.15	.15	i	i	i
į	21-80	1-5	1.55-1.70	6.00-20	0.02-0.06	0.0-2.9	0.0-0.5	.10	.15	į	į	į
3	0-6	   3-10	  1.30-1.50	6.00-20	0.08-0.12	   0.0-2.9	   2.0-10	1.17	   .17	   5	   2	134
-	6-80				1		0.5-1.0	.17	.17		İ	
2	0-6	2-5	  1 45_1 65	6 00-20	0 07-0 09		0 5-1 0	17	   17		   1	220
<b>4</b>										]	+	220
	5   1   1   1   1   1   1   1   1   1	41-80   5	41-80   18-34	41-80		41-80	41-80	41-80	41-80			41-80

	_								Erosi	on fac	tors		Wind
Map symbol and	Percent	Depth	Clay	Moist	Permea-	Available		Organic		1			erodi-
component name	of map unit		l I	bulk   density	bility	water  capacity	extensi-	matter	   Kw	   Kf	   ••	group	bility
	map unit	In	Pct	g/cc	In/hr	In/in	Pct	Pct	KW			group	Index
52: Augsburg	85	0-9	   10-27	1.20-1.40	0.60-2.00	  0.20-0.23	0.0-2.9	4.0-6.0	.28	.28	   5	   4L	86
i		9-33	5-18	1.30-1.50	2.00-6.00	0.20-0.23	0.0-2.9	1.0-3.0	.28	.28	İ	į	i
		33-80	35-85	1.10-1.40	0.0000-0.20	0.10-0.14	6.0-8.9	0.0-0.5	.28	.28	ĺ	į	į
Croke	5	0-12	   10-18	  1.25-1.40	2.00-6.00	  0.20-0.24	0.0-2.9	3.0-7.0	.28	   .28	   5	   3	86
i		12-21	10-18	1.35-1.55	2.00-6.00	0.17-0.22	0.0-2.9	0.0-0.5	.28	.28	İ	į	i
		21-80	35-60	1.15-1.50	0.06-0.20	0.10-0.15	6.0-8.9	0.0-0.5	.28	.28	į	į	į
Grano	5	0-11	   10-27	  1.30-1.60	0.60-6.00	  0.10-0.16	0.0-2.9	2.0-5.0	.24	.24	   5	   5	56
i		11-41	35-60	1.20-1.50	0.06-0.20	0.15-0.18	6.0-8.9	1.0-3.0	.32	.32	İ	į	i
İ		41-80	22-60	1.20-1.60	0.06-0.20	0.15-0.18	6.0-8.9	0.0-0.5	.32	.32	ĺ	į	į
Sago	5	0-14		  0.15-0.25	0.60-6.00	  0.35-0.45	0.0-2.9	   50-95			   5	   2	134
		14-80	6-18	1.50-1.70	0.60-2.00	0.14-0.20	0.0-2.9	0.0-2.0	.28	.28	į	į	į
59:			 	 	 	 	 	 		 	 	 	1
Grimstad	85	0-10	10-18	1.30-1.45	2.00-6.00	0.13-0.18	0.0-2.9	2.0-4.0	.20	.20	5	3	86
i		10-30	2-15	1.45-1.60	6.00-20	0.08-0.14	0.0-2.9	1.0-2.0	.20	.20	İ	į	i
		30-80	10-30	1.50-1.65	0.60-2.00	0.11-0.19	0.0-2.9	0.0-0.5	.37	.37			
Strathcona	12	0-10	   5-18	  1.25-1.45	2.00-6.00	  0.14-0.17	0.0-2.9	3.0-6.0	.20	.20	   3	   3	86
		10-17	10-18	1.30-1.50	2.00-6.00	0.14-0.16	0.0-2.9	0.5-1.0	.24	.24	İ	į	İ
		17-28	2-8	1.35-1.60	6.00-20	0.05-0.09	0.0-2.9	0.0-0.5	.10	.10			
		28-80	15-30	1.40-1.60	0.20-2.00	0.14-0.18	3.0-5.9	0.0-0.5	.32	.32			
Foxhome	3	0-10	10-20	1.35-1.50	2.00-6.00	0.13-0.18	0.0-2.9	3.0-7.0	.20	.20	   3	   3	86
I		10-15	2-10	1.45-1.60	6.00-20	0.07-0.12	0.0-2.9	0.5-1.0	.20	.20			
		15-23	1	1.50-1.70		0.02-0.07		0.5-1.0	.05	.15			
		23-80	12-35 	1.40-1.70	0.60-2.00	0.15-0.22	0.0-2.9	0.0-0.5	.32	.37	 	 	
64:			į	į	į	į	į	į	į	į	į	į	į
Ulen	85	0-10			1	0.13-0.18	1	2.0-5.0	.20	.20	3	3	86
		10-16		1.45-1.65	1	0.06-0.10	1	0.0-1.0	.17	.17			
		16-67 67-80		1.50-1.70  1.20-1.50	1	0.06-0.08 0.15-0.19	1	0.0-0.5	1.15	.15   .32	 	 	
			į	<u> </u>		į		į <u></u>	į	į		į	į
Rosewood	10	0-11 11-19	1	1.20-1.40		0.13-0.18		4.0-7.0	.24	.24	3	3	86
		19-65		1.20-1.40 1.45-1.65	1	0.11-0.15	1	1.0-3.0	1.15	1.15		 	
		65-80		1.40-1.65	1	0.03-0.08	1	0.0-0.5	.15	.15	 	 	
_ ,,										į			
Redby	3	0-3 3-28		1.40-1.60	1	0.08-0.12	1	0.5-2.0	1.17	1.17	5	2	134
		3-28 28-80		1.55-1.70  1.55-1.70	1	0.07-0.10	1	0.0-0.5	.17	.17   .17	l I	 	1
		20-00	1 0-0	11.33-1.70	0.00-20	0.00-0.08	0.0-2.9	0.0-0.5	• + /	/	I	I	1

Table 24.--Physical Properties of the Soils--Continued

Table 24.--Physical Properties of the Soils--Continued

Map symbol and component name	   Percent   of	   Depth	   Clay	   Moist     bulk	Permea- bility	Available water	   Linear  extensi-	Organic   matter	Erosi	on fac	tors	Wind  erodi-  bility	1
component name	map unit	 	l I	density	bility	capacity	bility	matter	Kw	Kf	   •••	group	
	map dire	In	Pct	g/cc	In/hr	In/in	Pct	Pct	100		-	group	Index
64:		 	 	 			[ [	 			 	 	 
Rushlake	2	0-8	3-10	1.50-1.70	6.00-20	0.10-0.12	0.0-2.9	0.5-4.0	.17	.17	5	2	134
		8-80	1-10	1.50-1.70	6.00-20	0.02-0.10	0.0-2.9	0.0-0.5	.05	.10			
65:		 	 				 				 	 	
Foxhome	85	0-10		1.35-1.50		0.13-0.18		3.0-7.0	.20	.20	3	3	86
		10-15	1	1.45-1.60		0.07-0.12		0.5-1.0	.20	.20			
		15-23		1.50-1.70		0.02-0.07		0.5-1.0	.05	.15			
		23-80	12-35	1.40-1.70	0.60-2.00	0.15-0.22	0.0-2.9	0.0-0.5	.32	.37	 	 	l
Strandquist	12	0-8			0.60-2.00			2.0-6.0	.28	.32	3	4L	86
		8-35		1.50-1.70		0.03-0.05		1.0-3.0	.10	.15			
		35-80	15-30	1.30-1.65	0.60-2.00	0.12-0.19	3.0-5.9	0.0-0.5	.37	.37		 	
Skagen	l l 3	   0-9	   10-18	  1.25-1.40	0.60-2.00	0.16-0.18	0.0-2.9	4.0-9.0	.20	.24	5	   4L	86
		9-19	1	1.30-1.50		0.11-0.18		0.5-2.0	.24	.28	i	i	İ
		19-80	10-18	1.30-1.50	0.60-6.00	0.11-0.18	0.0-2.9	0.0-0.5	.24	.28	į	į	į
67:		 	 	 		1	 	 			 	 	 
Bearden	85	0-7	10-26	1.20-1.40	0.60-2.00	0.20-0.24	3.0-5.9	3.0-7.0	.32	.32	5	4L	86
	İ	7-32	18-34	1.30-1.50	0.20-0.60	0.16-0.22	3.0-5.9	1.0-4.0	.37	.37	į	j	İ
		32-80	18-34	1.30-1.80	0.06-0.20	0.16-0.22	3.0-5.9	0.0-0.5	.43	.43			
Colvin	15	   0-11	27-34	  1.20-1.50	0.20-0.60	0.20-0.22	3.0-5.9	4.0-7.0	.32	.32	   5	   4L	86
		11-41	18-34	1.20-1.50	0.20-0.60	0.16-0.20	3.0-5.9	0.0-5.0	.32	.32	ĺ	ĺ	
		41-80	18-34	1.30-1.50	0.20-2.00	0.15-0.20	3.0-5.9	0.0-1.0	.32	.32			
77:		 	 	 		 	 				 	 	 
Garnes	85	0-9	5-20	1.40-1.60	2.00-6.00	0.14-0.18	0.0-2.9	0.5-2.0	.32	.32	5	3	86
		9-14	1	1.50-1.65		0.17-0.20		0.5-1.0	.32	.32			
		14-80 	10-27	1.60-1.75	0.60-2.00	0.14-0.19	0.0-2.9	0.0-0.5	.32	.32	 	 	l I
Chilgren	10	0-5	5-18	1.30-1.60	2.00-6.00	0.16-0.18	0.0-2.9	1.0-3.0	.28	.28	5	3	86
		5-9		1.40-1.60		0.13-0.22		0.5-1.0	.28	.28			
		9-16		1.30-1.70		0.18-0.22		0.0-0.5	.28	.28	!		
		16-80 	10-27 	1.30-1.75  	0.60-2.00	0.14-0.19	0.0-2.9	0.0-0.5	.28	.28	 	 	
Eckvoll	3	0-6	5-15	1.30-1.70	6.00-20	0.10-0.12	0.0-2.9	1.0-3.0	.17	.17	5	2	134
		6-21	!	1.30-1.70		0.06-0.08		0.5-1.0	.15	.15			
		21-26		1.40-1.70   1.30-1.70		0.16-0.18		0.0-0.5	37	37	 	 	
			İ					İ			İ		İ
Pelan	2	0-6	1		2.00-6.00	0.10-0.13		0.5-3.0	.24	.24	5	3	86
		6-12   12-24	1	1.50-1.65   1.55-1.70		0.05-0.11		0.5-1.0	.20	.24		 	
	 	24-60	1	1.55-1.70   1.40-1.75		1		0.0-0.5	.28	.28	I I	l I	 
		<u>2</u> 1-00	J-10	- • • • • • • • •	3.00-2.00			0.0-0.5	.20	.20	1	! 	

Percent	Depth	Clav										
	20202	Clay	Moist	Permea-	Available	Linear	Organic				erodi-	erodi-
of			bulk	bility	water	extensi-	matter				bility	
map unit			density		capacity	bility		Kw	Kf	T	group	index
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
90	0-12	8-18	1.25-1.45	2.00-6.00	0.10-0.14	0.0-2.9	3.0-8.0	.20	.20	5	3	86
į	12-80	2-10	1.50-1.70	6.00-40	0.02-0.04	0.0-2.9	0.0-0.5	.10	.15	į	į	į
5 l	   0-14	   0-0	  0.10-0.30	0.60-6.00	0.35-0.45	 	   50-90		 	   5	   2	134
i	14-16	2-18	1.20-1.70	2.00-20	0.09-0.17	0.0-2.9	4.0-10	.17	.17	i	i	i
į	16-80	0-10	1.50-1.70	6.00-20	0.02-0.07	0.0-2.9	0.5-2.0	.17	.17	į	İ	į
3	   0-8	   3-10	  1 50-1 70	6 00-20	0 10-0 12	   0 0-2 9	   0 5-4 0		   17	   5	   2	134
	8-80				1		0.0-0.5	.05	1.10		-	131
2	0 11	0 10		2 00 6 00	0 12 0 10							86
2					1			1		3	3	00
					1						 	1
i	65-80				1		0.0-0.5	1.15	1.15			
ļ	 	 				 	 					
0E	N-3	   2_10	  1 40_1 60	6 00-20	10 00-0 12	   0 0-2 0	   0 5-2 0		   17			134
65					1		1	1		]	<b>2</b> 	134
	28-80				1		0.0-0.5	.17	1.17	İ		
•	0-6	3-10	  1 20_1 50	6 00-20	0 00-0 12		2 0-10	17	17			134
0	6-80				1		0.5-1.0	1.17	1 .17		2	134
6					1					5	1 1	250
	3-22				1		0.0-0.5	1.15	.15		 	
į			İ				į	į	į	į	į	į
1						ı		1	1	5	2	134
	13-80 	0-10	1.50-1.65  	6.00-20	0.03-0.08	0.0-2.9 	0.5-5.0	.1/	•1/ 	 	 	
į	İ	j	j j		İ	İ	j	į	į	į	į	İ
85	0-6				0.08-0.12	0.0-2.9	2.0-10	.17	.17	5	2	134
	6-80	0-5	1.50-1.70	6.00-20	0.06-0.10	0.0-2.9	0.5-1.0	.17	.17			
7	0-13	 	  0.10-0.25	0.60-6.00	0.35-0.50	 	   50-90		 	5	2	134
ļ	13-80	0-10	1.50-1.65	6.00-20	0.03-0.08	0.0-2.9	0.5-5.0	.17	.17			
3	   0-10	   2-10	  1.35-1.50	6.00-20	0.06-0.11	   0.0-2.9	2.0-6.0	.17	   .17	   5	2	134
j	10-20	8-18	1.40-1.60	2.00-6.00	0.08-0.14	0.0-2.9	0.0-0.5	.15	.17	İ	į	İ
į	20-60	0-8	1.40-1.65	6.00-40	0.01-0.03	0.0-2.9	0.0-0.5	.10	.15	į	į	į
3	   0-3	   2-10	  1.40-1.60	6.00-20	0.08-0.12	0.0-2.9	0.5-2.0		   .17	   5	   2	134
-	3-28				1		0.0-0.5	1.17	1.17	i	, <u> </u>	
i	28-80				1			.17	.17	i	İ	i
	5 3 2 85 8 6 1 85 7	90   0-12   12-80   5   0-14   14-16   16-80   3   0-8   8-80   2   0-11   11-19   19-65   65-80   85   0-6   6-80   6   0-3   3-22   22-80   1   0-13   13-80   85   0-6   6-80   7   0-13   13-80   3   0-10   10-20   20-60   3   0-3   3-28	90   0-12   8-18   12-80   2-10   5   0-14   0-0   14-16   2-18   16-80   0-10   3   0-8   3-10   8-80   1-10   2   0-11   8-18   11-19   6-18   19-65   1-6   65-80   1-6   85   0-3   2-10   3-28   1-8   28-80   0-6   8   0-6   3-10   6-80   0-5   6   0-3   1-5   3-22   1-10   22-80   1-10   1   0-13     13-80   0-10   85   0-6   3-10   6-80   0-5   7   0-13     13-80   0-10   3   0-10   2-10   10-20   8-18   20-60   0-8   3   0-3   2-10   3-28   1-8   3-28   1-8   3-28   1-8   3-28   1-8   3-28   1-8   3-28   1-8   3-28   1-8   3-28   1-8   3-28   1-8   3-28   1-8   3-28   1-8   3-28	90    0-12    8-18    1.25-1.45    12-80    2-10    1.50-1.70    5    0-14    0-0    0.10-0.30    14-16    2-18    1.20-1.70    16-80    0-10    1.50-1.70    8-80    1-10    1.50-1.70    8-80    1-10    1.50-1.70    150-1.70    150-1.70    150-1.70    150-1.70    150-1.70    150-1.70    150-1.70    150-1.70    150-1.70    150-1.70    150-1.70    150-1.65    150-1.70    150-1.65    150-1.70    150-1.70    150-1.70    150-1.70    150-1.70    150-1.70    150-1.70    150-1.70    150-1.70    150-1.70    150-1.65    150-1.70    150-1.70    150-1.70    150-1.70    150-1.70    150-1.70    150-1.70    150-1.	90	90	90	90	90	90  0-12  8-18   1.25-1.45    2.00-6.00    0.10-0.14    0.0-2.9    3.0-8.0    .20    .20    12-80    2-10   1.50-1.70    6.00-40    0.02-0.04    0.0-2.9    0.0-0.5    .10    .15	90	90

Table 24.--Physical Properties of the Soils--Continued

Table 24.--Physical Properties of the Soils--Continued

Map symbol and	Percent	   Depth	   Clay	Moist	Permea-	  Available		Organic	Erosi	on fac	tors	erodi-	1
component name	of map unit		 	bulk     density	bility	water  capacity	extensi-	matter	Kw	   Kf	   T	bility  group	
		In	Pct	g/cc	In/hr	In/in	Pct	Pct			<u>  -</u>		
117:			 	 			 	 			 	 	 
Grygla, depressional	2	0-5	2-15	1.40-1.60	6.00-20	0.10-0.15	0.0-2.9	1.0-10	.15	.15	5	2	134
i		5-36	1-10	1.50-1.70	6.00-20	0.06-0.11	0.0-2.9	0.0-1.0	.15	.15	i	i	i
į		36-80	8-27	1.30-1.75	0.20-2.00	0.17-0.19	3.0-5.9	0.0-0.5	.37	.37	į	į	į
133:				 									 
Dalbo	85	0-15	20-27	1.25-1.45	0.60-2.00	0.22-0.24	0.0-2.9	2.0-4.0	.37	.37	5	6	48
Į.		15-23	35-60	1.25-1.45	0.06-0.60	0.10-0.18	6.0-8.9	0.5-2.0	.32	.32			
		23-80	35-60	1.30-1.60	0.20-2.00	0.10-0.18	3.0-5.9	0.0-0.5	.32	.32			
Mustinka	10	   0-9	28-40	  1.10-1.30	0.20-0.60	0.17-0.24	3.0-5.9	5.0-10	.28	.28	5	   7	38
Į.		9-35	35-60	1.20-1.40	0.06-0.20	0.13-0.19	6.0-8.9	1.0-3.0	.37	.37			
J		35-62	18-35	1.20-1.40	0.20-0.60	0.14-0.19	3.0-5.9	0.5-1.0	.37	.37			
		62-80	18-35	1.40-1.60	0.20-0.60	0.14-0.19	3.0-5.9	0.0-0.5	.37	.37			
Moranville	5	0-8	2-10	  1.45-1.60	6.00-20	0.08-0.11	0.0-2.9	0.5-2.0	.17	.17	5	2	134
J		8-24	2-5	1.45-1.60	6.00-20	0.05-0.11	0.0-2.9	0.0-0.5	.15	.15			
J		24-42	27-35	1.15-1.30	0.20-0.60	0.14-0.20	3.0-5.9	0.0-0.5	.43	.43			
		42-80	15-35	1.15-1.30	0.20-2.00	0.13-0.20	3.0-5.9	0.0-0.5	.43	.43			
145:													
Enstrom	85	0-6	4-15	1.30-1.50	6.00-20	0.10-0.12	0.0-2.9	0.5-4.0	.17	.17	5	2	134
J		6-29	1	1.40-1.65		0.06-0.08	0.0-2.9	0.0-0.5	.15	.15			
		29-80	10-35	1.50-1.65  	0.20-2.00	0.17-0.20	3.0-5.9	0.0-0.5	.37	.37		 	
Grygla	10	0-6	1	  1.40-1.60		0.13-0.15		1.0-4.0	.15	.15	5	2	134
J		6-26		1.50-1.70		0.06-0.11		0.5-1.0	.15	.15			
		26-80	8-27	1.30-1.75  	0.20-2.00	0.17-0.19	3.0-5.9	0.0-0.5	.37	.37		 	
Redby	4	0-3	1	1.40-1.60		0.08-0.12		0.5-2.0	.17	.17	5	2	134
J		3-28		1.55-1.70		0.07-0.10		0.0-0.5	.17	.17			
		28-80	0-6	1.55-1.70	6.00-20	0.06-0.08	0.0-2.9	0.0-0.5	.17	.17		 	
Pelan	1	0-6	5-20	  1.35-1.55	2.00-6.00	0.10-0.13	0.0-2.9	0.5-3.0	.24	.24	5	3	86
J		6-12	15-25	1.50-1.65	6.00-20	0.05-0.11	0.0-2.9	0.5-1.0	.20	.24			
J		12-24	1-8	1.55-1.70	6.00-20	0.02-0.09	0.0-2.9	0.0-0.5	.20	.20			
		24-60	8-18	1.40-1.75	0.60-2.00	0.14-0.18	0.0-2.9	0.0-0.5	.28	.28		 	
147:													
Spooner	85	0-6			2.00-6.00	0.20-0.22		2.0-4.0	.37	.37	5	3	86
ļ		6-15			0.60-6.00	0.17-0.19		0.5-1.0	.37	.37	1		
ļ		15-22		1.30-1.50		0.17-0.22		0.0-0.5	.37	.37			
		22-60	5-32	1.40-1.60	0.60-2.00	0.17-0.22	0.0-2.9	0.0-0.5	.37	.37	1	1	1

Map symbol and	Percent	   Depth	   Clay	Moist	Permea-	  Available	1	Organic	Erosi	on fac	tors	erodi-	
component name	of map unit	 	 	bulk density	bility	water  capacity	extensi-	matter	   Kw	   Kf	   T	bility	
	map unit	In	Pct	g/cc	In/hr	In/in	Pct	Pct	ICW		-	 	Index
 147:		 	 				 	 		 	 		 
Baudette	5	0-8	5-18	1.30-1.45	2.00-6.00	0.15-0.19	0.0-2.9	1.0-4.0	.28	.28	5	3	86
i		8-10	5-27	1.30-1.50	0.60-2.00	0.14-0.20	0.0-2.9	0.5-1.0	.37	.37	i	İ	İ
i		10-30	18-35	1.25-1.45	0.60-2.00	0.17-0.24	3.0-5.9	0.5-1.0	.37	.37	İ	İ	j
		30-80	5-27	1.30-1.60	0.60-2.00	0.17-0.22	0.0-2.9	0.0-0.5	.37	.37			
Grygla	5	   0-6	2-15	1.40-1.60	6.00-20	0.13-0.15	0.0-2.9	1.0-4.0	1.15	1 .15	   5	2	134
İ		6-26	1-10	1.50-1.70	6.00-20	0.06-0.11	0.0-2.9	0.5-1.0	.15	.15	ĺ	İ	ĺ
		26-80	8-27	1.30-1.75	0.20-2.00	0.17-0.19	3.0-5.9	0.0-0.5	.37	.37			
  Sago	5	   0-14	 	0.15-0.25	0.60-6.00	0.35-0.45	0.0-2.9	   50-95			   5	   2	134
į		14-80	6-18	1.50-1.70	0.60-2.00	0.14-0.20	0.0-2.9	0.0-2.0	.28	.28	į	į	į
158B:		 	l I	 			 	 		 	 	 	 
Zimmerman	85	0-6	2-5	1.45-1.65	6.00-20	0.07-0.09	0.0-2.9	0.5-1.0	.17	.17	5	1	220
		6-80		1.50-1.70		0.06-0.10	1	0.0-0.5	.17	.17			
   Hiwood	6	   0-3	   1-5	  1.40-1.60	6.00-20	0.08-0.12	   0.0-2.9	0.5-2.0		   .15	   5	   1	250
		3-22		1.55-1.70		0.07-0.10	1	0.0-0.5	.15	.15		İ	İ
		22-80	1-10	1.55-1.70	6.00-20	0.05-0.08	0.0-2.9	0.0-0.5	.15	.15	į	į	į
Two Inlets	6	   0-2	   2-10	  1.40-1.60	6.00-20	0.10-0.12	   0.0-2.9	0.5-1.0	1.10	   .15	   5	   2	134
i		2-4	2-10	1.40-1.60	6.00-20	0.09-0.11	0.0-2.9	0.0-0.5	.10	.15	i	İ	İ
		4-17	5-15	1.40-1.60	6.00-20	0.09-0.11	0.0-2.9	0.0-0.5	.10	.15	İ	İ	j
		17-80	0-3	1.60-1.80	20-40	0.02-0.04	0.0-2.9	0.0-0.5	.05	.10			
Redby	3	0-3	2-10	1.40-1.60	6.00-20	0.08-0.12	0.0-2.9	0.5-2.0	.17	1 .17	   5	2	134
İ		3-28	1-8	1.55-1.70	6.00-20	0.07-0.10	0.0-2.9	0.0-0.5	.17	.17	ĺ	İ	ĺ
		28-80	0-6	1.55-1.70	6.00-20	0.06-0.08	0.0-2.9	0.0-0.5	.17	.17			
167B:		 					 				 		 
Baudette	85	0-8	5-18	1.30-1.45	2.00-6.00	0.15-0.19	0.0-2.9	1.0-4.0	.28	.28	5	3	86
		8-10		1.30-1.50		0.14-0.20		0.5-1.0	.37	.37			
		10-30		1.25-1.45		0.17-0.24	1	0.5-1.0	.37	.37	ļ	ļ	!
		30-80	5-27 	1.30-1.60	0.60-2.00	0.17-0.22	0.0-2.9	0.0-0.5	.37	.37 	 	 	 
Spooner	10	0-6				0.20-0.22		2.0-4.0	.37	.37	5	3	86
		6-15		1.35-1.55		0.17-0.19		0.5-1.0	.37	.37		ļ	
		15-22		1.30-1.50		0.17-0.22		0.0-0.5	.37	.37			ļ
		22-60	5-32	1.40-1.60	0.60-2.00	0.17-0.22	0.0-2.9	0.0-0.5	.37	.37	 		 
Moranville	5	0-8		1.45-1.60		0.08-0.11	1	0.5-2.0	.17	.17	5	2	134
		8-24		1.45-1.60		0.05-0.11		0.0-0.5	.15	.15	ļ		ļ
		24-42		1.15-1.30		1	1	0.0-0.5	.43	.43			ļ
		42-80	15-35	1.15-1.30	0.20-2.00	0.13-0.20	3.0-5.9	0.0-0.5	.43	.43			

Table 24.--Physical Properties of the Soils--Continued

Table 24.--Physical Properties of the Soils--Continued

Map symbol and	Percent	Depth	   Clay	Moist	Permea-	  Available		   Organic	Erosi	on fac	tors	erodi-	Wind  erodi-
component name	of			bulk	bility	water	extensi-	matter	!		!	-	bility
	map unit		<u> </u>	density	- /	capacity	bility	<u> </u>	Kw	Kf	T	group	index
		In	Pct 	g/cc   	In/hr	In/in	Pct	Pct		 	 	 	
187:				i i			İ	İ	i		İ		İ
Haug	90	0-10		0.13-0.42		0.35-0.48	I .	50-90			5	2	134
l l		10-16		1.20-1.60		0.12-0.24		4.0-6.0	.20	.20	ļ		ļ
		16-80	10-18	1.40-1.60	0.60-2.00	0.11-0.19	0.0-2.9	0.5-1.0	.20	.20	 		
Percy	5	0-10	10-30	  1.30-1.60	0.60-2.00	0.18-0.22	3.0-5.9	4.0-9.0	.24	.28	   5	   5	56
Ī		10-25	10-18	1.30-1.60	0.60-2.00	0.15-0.19	0.0-2.9	0.5-1.0	.24	.28	İ	į	İ
İ		25-80	7-18	1.60-1.80	0.60-2.00	0.12-0.19	0.0-2.9	0.0-0.5	.24	.28	ĺ	į	į
Cathro		0-8		  0 15_0 35	0.20-6.00	0.45-0.55	 	   60-85		 	   2	   2	134
Cathio	] 3	8-40	1	0.15-0.30		0.35-0.45	1	60-85			<u>4</u> 	2	134
		40-80	1	1.50-1.70		0.11-0.19	1	1.0-5.0	.20	.24	 	 	i
											İ		İ
Boash	2	0-9	30-40	1.10-1.40	0.06-0.20	0.13-0.17	6.0-8.9	3.0-6.0	.32	.32	5	4	86
1		9-29	35-60	1.10-1.40	0.06-0.20	0.15-0.20	6.0-8.9	1.0-3.0	.32	.32			
		29-80	16-35	1.20-1.60	0.60-2.00	0.12-0.18	3.0-5.9	0.0-0.5	.32	.32			
191:			 	 			 	 		 	 	 	
Epoufette	85	0-10	2-10	1.35-1.50	6.00-20	0.06-0.11	0.0-2.9	2.0-6.0	.17	.17	5	2	134
		10-20	8-18	1.40-1.60	2.00-6.00	0.08-0.14	0.0-2.9	0.0-0.5	.15	.17	İ	į	į
		20-60	0-8	1.40-1.65	6.00-40	0.01-0.03	0.0-2.9	0.0-0.5	.10	.15			
 	   5	0-6	   3-10	  1.30-1.50	6.00-20	0.08-0.12	0.0-2.9	2.0-10	1.17	   .17	   5	   2	134
1		6-80		1.50-1.70		0.06-0.10		0.5-1.0	.17	.17		<u> </u>	-51
			İ	į į		İ	İ	Ì	İ	İ	İ	İ	İ
Leafriver	5	0-13	1			0.35-0.50	1	50-90			5	2	134
		13-80	0-10	1.50-1.65	6.00-20	0.03-0.08	0.0-2.9	0.5-5.0	.17	.17	 		
   Meehan	   5	0-8	4-10	  1.35-1.65	2.00-6.00	0.10-0.12	0.0-2.9	0.5-3.0	.17	   .17	   5	   2	134
		8-31		1.60-1.70		0.06-0.11	1	0.0-0.5	.15	.15		i	i
İ		31-80	1-4	1.60-1.70	6.00-20	0.02-0.07	0.0-2.9	0.0-0.5	.15	.15	į	į	į
202:			 				 	 		 	 		
Meehan	l 85	0-8	4-10	  1.35-1.65	2.00-6.00	0.10-0.12	0.0-2.9	0.5-3.0	.17	.17	   5	2	134
		8-31		1.60-1.70		0.06-0.11		0.0-0.5	.15	.15	-	-	
		31-80	1-4	1.60-1.70	6.00-20	0.02-0.07	0.0-2.9	0.0-0.5	.15	.15	İ	į	į
I													
Cormant	8	0-6		1.30-1.50		0.08-0.12		2.0-10	.17	1.17	5	2	134
		6-80	0-5	1.50-1.70	6.00-20	0.06-0.10	0.0-2.9	0.5-1.0	.17	.17	 	 	
Wurtsmith	5	0-5	3-8	  1.50-1.65	6.00-20	0.08-0.12	0.0-2.9	0.5-2.0	.17	.17	5	2	134
i		5-45	2-7	1.35-1.65	6.00-20	0.05-0.11	0.0-2.9	0.0-0.5	.15	.15	İ	İ	İ
İ		45-80	0-4	1.50-1.70	6.00-20	0.04-0.07	0.0-2.9	0.0-0.5	.15	.15	ļ	ļ	ļ
Leafriver	   2	0-13			0.60-6.00	0.35-0.50	 	50-90		 	   5	   2	134
Learriver	4	13-80		0.10-0.25   1.50-1.65		0.35-0.50	1	0.5-5.0	1.17		5 	2	1 134
		13-00	1 0-10	1 20 - 1 - 62	3.00-20	10.03-0.08	0.0-2.9	0.5-5.0	/	/	I	I	I

		!	ļ					!	Erosi	on fac	tors		Wind
Map symbol and	Percent	Depth	Clay	Moist	Permea-	Available	1	Organic	ļ			erodi-	1
component name	of	!	ļ	bulk	bility	water	extensi-	matter	!	ļ	ļ	bility	
	map unit	<u> </u>		density		capacity	bility	<u> </u>	Kw	Kf	T	group	index
	  -	In	Pct	g/cc	In/hr	In/in	Pct	Pct		l I		 	
205:	 											 	
Karlstad	85	0-7	1-10	1.40-1.60	6.00-20	0.10-0.12	0.0-2.9	1.0-4.0	.17	.17	3	2	134
		7-10	5-18	1.35-1.60	2.00-6.00	0.13-0.18	0.0-2.9	0.5-2.0	.24	.24			
		10-14		1.50-1.70		0.12-0.16	1	0.0-0.5	.10	.17			
	 	14-80	1-5	1.50-1.70	6.00-20	0.02-0.04	0.0-2.9	0.0-0.5	.10	.17			
Sahkahtay	   7	0-4	5-15	1.35-1.50	2.00-6.00	0.10-0.14	0.0-2.9	2.0-4.0	.20	.20	5	   3	86
		4-8	2-10	1.45-1.55	6.00-20	0.05-0.08	0.0-2.9	0.5-1.0	.15	.15			
		8-14	18-30	1.40-1.55	0.60-2.00	0.13-0.17	3.0-5.9	0.5-1.0	.28	.28			
		14-80	1-8	1.50-1.70	20-40	0.03-0.06	0.0-2.9	0.0-0.5	.10	.15			
Marquette	   5	0-7	1-10	  1.40-1.60	6.00-20	0.10-0.14	0.0-2.9	1.0-3.0	1.17	1 .17	   5	   2	134
		7-16	5-18	1.50-1.70	2.00-6.00	0.10-0.16	0.0-2.9	0.5-1.0	.15	.20	ĺ	ĺ	İ
		16-80	1-5	1.50-1.70	20-60	0.02-0.04	0.0-2.9	0.0-0.5	.05	.15			
Redby	   2	0-3	2-10	1.40-1.60	6.00-20	0.08-0.12	0.0-2.9	0.5-2.0	.17	   .17	   5	   2	134
-	İ	3-28	1-8	1.55-1.70	6.00-20	0.07-0.10	0.0-2.9	0.0-0.5	.17	.17	İ	j	i
		28-80	0-6	1.55-1.70	6.00-20	0.06-0.08	0.0-2.9	0.0-0.5	.17	.17	į		į
Pits, gravel	   1										   -	 	
242B:	 	 		 						 	 	 	
Marquette	85	0-7	1-10	1.40-1.60	6.00-20	0.10-0.14	0.0-2.9	1.0-3.0	.17	.17	5	2	134
		7-16	5-18	1.50-1.70	2.00-6.00	0.10-0.16	0.0-2.9	0.5-1.0	.15	.20	ĺ	ĺ	İ
		16-80	1-5	1.50-1.70	20-60	0.02-0.04	0.0-2.9	0.0-0.5	.05	.15			
Karlstad	   14	0-7	1-10	1.40-1.60	6.00-20	0.10-0.12	0.0-2.9	1.0-4.0	.17	1 .17	   3	   2	134
	İ	7-10	5-18	1.35-1.60	2.00-6.00	0.13-0.18	0.0-2.9	0.5-2.0	.24	.24	ĺ	İ	İ
		10-14	5-18	1.50-1.70	2.00-6.00	0.12-0.16	0.0-2.9	0.0-0.5	.10	.17			
		14-80	1-5	1.50-1.70	6.00-20	0.02-0.04	0.0-2.9	0.0-0.5	.10	.17			
Pits, gravel	   1	 					 				-	 	
280:	 	 	l I	 			 	I I		l I	 	 	i i
Pelan	85	0-6	5-20	1.35-1.55	2.00-6.00	0.10-0.13	0.0-2.9	0.5-3.0	.24	.24	5	3	86
	İ	6-12	15-25	1.50-1.65	6.00-20	0.05-0.11	0.0-2.9	0.5-1.0	.20	.24	İ	İ	İ
	İ	12-24	1-8	1.55-1.70	6.00-20	0.02-0.09	0.0-2.9	0.0-0.5	.20	.20	İ	j	i
		24-60	8-18	1.40-1.75	0.60-2.00	0.14-0.18	0.0-2.9	0.0-0.5	.28	.28	į		į
Strandquist	   10	0-8	   10-25	  1.20-1.70	0.60-2.00	0.14-0.18	3.0-5.9	2.0-6.0	.28	.32	   3	   4L	   86
-	İ	8-35		1.50-1.70		0.03-0.05	1	1.0-3.0	.10	.15	İ	İ	i
	İ	35-80		1.30-1.65		0.12-0.19	3.0-5.9	0.0-0.5	.37	.37	į		į
Garnes	   3	0-9	5-20	  1.40-1.60	2.00-6.00	0.14-0.18	0.0-2.9	0.5-2.0	.32	.32	   5	   3	86
	į	9-14	1	1.50-1.65		0.17-0.20		0.5-1.0	.32	.32	i		i
	İ	14-80		1.60-1.75		0.14-0.19	0.0-2.9	0.0-0.5	.32	.32	İ	İ	i
	j	į	į			į	İ	į	į	į	į	İ	į

Table 24.--Physical Properties of the Soils--Continued

Table 24.--Physical Properties of the Soils--Continued

Map symbol and	Percent	   Depth	   Clay	Moist	Permea-	Available		   Organic	Erosi	on fac		erodi-	Wind  erodi-
component name	of map unit	 	 	bulk density	bility	water  capacity	extensi-	matter	Kw	   Kf		bility	
	map diffe	In	Pct	g/cc	In/hr	In/in	Pct	Pct			<u> </u>	 	l
280:				 			 	 			 		 
Marquette	1	0-7	1-10	1.40-1.60	6.00-20	0.10-0.14	0.0-2.9	1.0-3.0	.17	.17	5	2	134
		7-16	5-18	1.50-1.70	2.00-6.00	0.10-0.16		0.5-1.0	.15	.20			
		16-80	1-5	1.50-1.70	20-60	0.02-0.04	0.0-2.9	0.0-0.5	.05	.15	 		
Pits, gravel	1										-		
379:			 	 			 	 			 	 	 
Percy, very cobbly	90	0-8	10-30	1.30-1.60	0.60-2.00	0.18-0.22	3.0-5.9	4.0-9.0	.24	.28	5	5	56
i		8-23	10-18	1.30-1.60	0.60-2.00	0.15-0.19	0.0-2.9	0.5-1.0	.24	.28	İ	İ	į
		23-80	7-18	1.60-1.80	0.60-2.00	0.12-0.19	0.0-2.9	0.0-0.5	.24	.28	į	į	į
Boash	3	   0-9	30-40	  1.10-1.40	0.06-0.20	0.13-0.17	   6.0-8.9	3.0-6.0	.32	.32	   5	   4	   86
		9-29	35-60	1.10-1.40	0.06-0.20	0.15-0.20	6.0-8.9	1.0-3.0	.32	.32	ĺ	İ	İ
		29-80	16-35	1.20-1.60	0.60-2.00	0.12-0.18	3.0-5.9	0.0-0.5	.32	.32	į	į	į
Strandquist	3	   0-8	   10-25	  1.20-1.70	0.60-2.00	0.14-0.18	3.0-5.9	2.0-6.0	.28	.32	   3	   4L	   86
2024114442220	_	8-35		1.50-1.70		0.03-0.05		1.0-3.0	.10	.15			
		35-80		1.30-1.65		0.12-0.19		0.0-0.5	.37	.37			į
Haug	2	   0-10	 	  0.13-0.42	0.60-6.00	0.35-0.48	 	   50-90		 	   5	2	   134
	_	10-16	1	1.20-1.60		0.12-0.24	1	4.0-6.0	.20	.20	-	-	
		16-80	1		0.60-2.00	0.11-0.19	0.0-2.9	0.5-1.0	.20	.20	į		į
Skagen, very cobbly	2	   0-10	   10-18	  1.25-1.40	0.60-2.00	0.16-0.18	0.0-2.9	4.0-9.0	.20	.24	   5	   4L	   86
	_	10-28		1.30-1.50		0.11-0.18		0.5-2.0	.24	.28	-		
		28-80		1.30-1.50		0.11-0.18		0.0-0.5	.24	.28	İ	İ	İ
383:		 	 	 			 	 			 		 
Percy	90	0-10	10-30	  1.30-1.60	0.60-2.00	0.18-0.22	3.0-5.9	4.0-9.0	.24	.28	5	5	56
-		10-25	10-18	1.30-1.60	0.60-2.00	0.15-0.19	0.0-2.9	0.5-1.0	.24	.28	İ	İ	İ
		25-80	7-18	1.60-1.80	0.60-2.00	0.12-0.19	0.0-2.9	0.0-0.5	.24	.28	į	į	į
Boash	3	   0-9	30-40	  1.10-1.40	0.06-0.20	0.13-0.17	6.0-8.9	3.0-6.0	.32	.32	   5	   4	   86
i	i	9-29	35-60	1.10-1.40	0.06-0.20	0.15-0.20	6.0-8.9	1.0-3.0	.32	.32	İ	İ	į
		29-80	16-35	1.20-1.60	0.60-2.00	0.12-0.18	3.0-5.9	0.0-0.5	.32	.32	ĺ	į	į
  Strandquist	3	   0-8	   10-25	  1.20-1.70	0.60-2.00	0.14-0.18	3.0-5.9	2.0-6.0	.28	.32	   3	   4L	   86
	-	8-35		1.50-1.70		0.03-0.05		1.0-3.0	.10	.15	ĺ	İ	İ
		35-80			0.60-2.00	0.12-0.19		0.0-0.5	.37	.37	į		į
Haug	2	   0-10	 	  0.13-0.42	0.60-6.00	0.35-0.48	 	   50-90			   5	2	   134
	-	10-16	1		0.60-6.00	0.12-0.24	1	4.0-6.0	.20	.20	]		101
		16-80			0.60-2.00	0.11-0.19		0.5-1.0	.20	.20	İ		İ
			į			i	i	i	1		İ	İ	i

									Erosi	on fac	tors		Wind
Map symbol and component name	Percent   of   map unit	Depth	Clay 	Moist     bulk     density	Permea- bility	Available   water  capacity	Linear  extensi-   bility	Organic   matter	     Kw	   Kf		erodi-  bility  group	-
	map dire	In	Pct	q/cc	In/hr	In/in	Pct	Pct	1cw	101	1	group	Index
			100	9,00	/	111/111		100		i	i	1	ì
383:	i		İ	i i		İ	İ	i	İ	İ	i	i	İ
Skagen	2	0-9	10-18	1.25-1.40	0.60-2.00	0.16-0.18	0.0-2.9	4.0-9.0	.20	.24	5	4L	86
	į į	9-19	10-18	1.30-1.50	0.60-6.00	0.11-0.18	0.0-2.9	0.5-2.0	.24	.28	ĺ	İ	Ì
		19-80	10-18	1.30-1.50	0.60-6.00	0.11-0.18	0.0-2.9	0.0-0.5	.24	.28	ĺ	İ	İ
384:				 			 	 		l I	 		
Percy, depressional	85	0-8	10-18	1.30-1.60	0.60-2.00	0.20-0.22	3.0-5.9	4.0-12	.24	.28	5	4L	86
	j i	8-27	12-18	1.30-1.60	0.60-2.00	0.15-0.19	3.0-5.9	0.0-1.0	.24	.28	İ	İ	i
		27-80	7-18	1.60-1.80	0.60-2.00	0.12-0.19	0.0-2.9	0.0-0.5	.24	.28	į	į	į
Haug	   <b>7</b>	0-10		  0.13-0.42	0.60-6.00	0.35-0.48	 	   50-90		 	   5	2	134
naug	,	10-16		1.20-1.60	0.60-6.00	0.12-0.24	1	4.0-6.0	.20	.20		-	131
		16-80		1.40-1.60	0.60-2.00	0.11-0.19	1	0.5-1.0	.20	.20	i	i	İ
	į į		į	į į		İ	İ	İ	į	į	İ	İ	İ
Percy	5	0-10		1.30-1.60		0.18-0.22	1	4.0-9.0	.24	.28	5	5	56
		10-25	1	1.30-1.60	0.60-2.00	0.15-0.19		0.5-1.0	.24	.28	ļ	!	!
		25-80	7-18	1.60-1.80	0.60-2.00	0.12-0.19	0.0-2.9	0.0-0.5	.24	.28	 		
Boash	3	0-9	30-40	1.10-1.40	0.06-0.20	0.13-0.17	6.0-8.9	3.0-6.0	.32	.32	5	4	86
	j i	9-29		1.10-1.40		0.15-0.20	6.0-8.9	1.0-3.0	.32	.32	İ	İ	i
		29-80	16-35	1.20-1.60	0.60-2.00	0.12-0.18	3.0-5.9	0.0-0.5	.32	.32	į	į	į
387:			 				 	 			 		
Roliss, depressional	85	0-8	18-27	1.10-1.50	0.20-2.00	0.17-0.24	3.0-5.9	3.0-8.0	.28	.28	5	6	48
	ĺ	8-13	18-35	1.30-1.70	0.20-0.60	0.15-0.19	3.0-5.9	1.0-3.0	.28	.28	ĺ	İ	İ
		13-80	18-35	1.30-1.70	0.20-2.00	0.15-0.19	3.0-5.9	0.5-1.0	.28	.28			ļ
Haug	   10	0-10	 	  0.13-0.42	0.60-6.00	0.35-0.48	 	   50-90			   5	2	134
		10-16		1.20-1.60	0.60-6.00	0.12-0.24	1	4.0-6.0	.20	.20	-	i -	
		16-80		1.40-1.60	0.60-2.00	0.11-0.19	1	0.5-1.0	.20	.20	İ	İ	į
Roliss	   5	0-14	10 27	  1.10-1.50	0.60-2.00	0.17-0.24		3.0-7.0			   5	   4L	86
ROIISS	] 5	14-20		1.30-1.70		0.17-0.24	1	1.0-3.0	.28	.28	5	1 47	00
		20-80		1.30-1.70	0.20-2.00	0.15-0.19	1	0.5-1.0	.28	.28			
			į	į į		į	į	į	į	į	į	į	į
404:													
Chilgren	85	0-5		1.30-1.60		0.16-0.18	1	1.0-3.0	.28	.28	5	3	86
		5-9		1.40-1.60		0.13-0.22	1	0.5-1.0	.28	.28		-	
	 	9-16 16-80		1.30-1.70   1.30-1.75		0.18-0.22		0.0-0.5	.28	.28	 		l I
		10 00	10 27		2.00 2.00				.23	.23			
Garnes	5	0 - 9		1.40-1.60		0.14-0.18	1	0.5-2.0	.32	.32	5	3	86
		9-14		1.50-1.65		0.17-0.20	1	0.5-1.0	.32	.32	ļ	-	!
		14-80	10-27	1.60-1.75	0.60-2.00	0.14-0.19	0.0-2.9	0.0-0.5	.32	.32			

Table 24.--Physical Properties of the Soils--Continued

Table 24.--Physical Properties of the Soils--Continued

Map symbol and	Percent	   Depth	   Clay	Moist	Permea-	  Available	t .	Organic	Erosi	on fac	tors	erodi-	Wind  erodi-
component name	of			bulk	bility	water	extensi-	matter		   Kf		-	bility
	map unit	l In	Pct	density   g/cc	In/hr	capacity In/in	bility   Pct	Pct	Kw	KI	T	group	Index
				3,00					ì	i	i		
404:			ĺ	ĺ		İ			İ	ĺ		İ	
Grygla	5	0-6	1	1.40-1.60		0.13-0.15		1.0-4.0	.15	.15	5	2	134
		6-26		1.50-1.70		0.06-0.11	t .	0.5-1.0	.15	.15			
		26-80	8-27	1.30-1.75	0.20-2.00	0.17-0.19	3.0-5.9	0.0-0.5	.37	.37			
Haug	l   5	   0-10	 	  0.13-0.42	0.60-6.00	0.35-0.48	 	   50-90			l   5	2	134
		10-16	1	1.20-1.60		0.12-0.24		4.0-6.0	.20	.20	i	İ	i
İ		16-80	10-18	1.40-1.60	0.60-2.00	0.11-0.19	0.0-2.9	0.5-1.0	.20	.20		į	į
412:			 					  -		 			
Mavie	85	0-12	8-18	  1.35-1.55	2.00-6.00	0.13-0.15	0.0-2.9	3.0-6.0	.20	.20	   3	3	86
i	İ	12-18	10-27	1.35-1.55	0.60-2.00	0.12-0.19	0.0-2.9	1.0-3.0	.28	.28	i	İ	i
j	j	18-39	2-10	1.40-1.65	6.00-20	0.03-0.05	0.0-2.9	0.0-0.5	.10	.15	ĺ	İ	İ
		39-80	18-35	1.40-1.70	0.20-2.00	0.15-0.21	0.0-2.9	0.0-0.5	.37	.37		İ	İ
Foxhome	   5	   0-10	10-20	  1 35_1 50	2.00-6.00	  0.13-0.18	0 0-2 9	   3.0-7.0	.20	.20	   3	   3	86
1 OMIOMO	, J	10-15	1	1.45-1.60		0.07-0.12		0.5-1.0	.20	.20	]	3	00
,		15-23	1	1.50-1.70		0.02-0.07		0.5-1.0	.05	.15		 	
		23-80			0.60-2.00	1		0.0-0.5	.32	.37			İ
Northwood	   5	   0-11			2.00-6.00	  0.35-0.45	 	   50-85		 	   5	2	134
NOT CHWOOD	] <b>5</b>	11-16	1	0.18-0.25   1.45-1.65		0.09-0.17	1	1.0-3.0	1.15	1.15	3	4	1 134
,		16-25		1.45-1.05   1.55-1.70		0.06-0.11		0.0-0.5	1.15	1.15		 	
		25-80	1		0.60-2.00	1		0.0-0.5	.37	.37			
						İ			į	İ		İ	
Percy, very cobbly	5	0-8	1			0.18-0.22		4.0-9.0	.24	.28	5	5	56
l l		8-23		1.30-1.60		0.15-0.19		0.5-1.0	.24	.28			ļ
	 	23-80	7-18	1.60-1.80  	0.60-2.00	0.12-0.19	0.0-2.9	0.0-0.5	.24	.28	 		
432:									i				
Strandquist	85	0-8	10-25	1.20-1.70	0.60-2.00	0.14-0.18	3.0-5.9	2.0-6.0	.28	.32	3	4L	86
		8-35	1-8	1.50-1.70	6.00-20	0.03-0.05	0.0-2.9	1.0-3.0	.10	.15			
		35-80	15-30	1.30-1.65	0.60-2.00	0.12-0.19	3.0-5.9	0.0-0.5	.37	.37			
Percy, very cobbly	   5	   0-8	10-30	  1.30-1.60	0.60-2.00	0.18-0.22	3.0-5.9	4.0-9.0	.24	.28	   5	   5	56
	İ	8-23	10-18	1.30-1.60	0.60-2.00	0.15-0.19	0.0-2.9	0.5-1.0	.24	.28	i	İ	i
İ		23-80	7-18	1.60-1.80	0.60-2.00	0.12-0.19	0.0-2.9	0.0-0.5	.24	.28		į	į
Haug	   4	   0-10	 	  0.13-0.42	0.60-6.00	0.35-0.48	 	   50-90		 	   5	2	134
g	, <del>,</del>	10-16	1	0.13-0.42   1.20-1.60		0.12-0.24	1	4.0-6.0	.20	.20	]	4	134
		16-80				0.11-0.19		0.5-1.0	.20	.20			
Boash	3	0-9				0.13-0.17		3.0-6.0	.32	.32	5	4	86
!		9-29 29-80	1	1.10-1.40		0.15-0.20 0.12-0.18		1.0-3.0	.32	32			1
	l l	23-80	10-32	11.20-1.60	0.00-2.00	0.12-0.18	3.0-5.9	0.0-0.5	.34	.34	1	I	I

	_				_				Erosi	on fac	tors		Wind
Map symbol and	Percent	Depth	Clay	Moist	Permea-	Available	1	Organic		1		erodi-	
component name	of	 		bulk	bility	water	extensi-	matter	1 77	   77.6		bility	
	map unit	<u> </u>	<u> </u>	density		capacity	bility		Kw	Kf	T	group	Index
		In	Pct	g/cc	In/hr	In/in	Pct	Pct				 	
432:		 	 	 			 		1	1	 	 	 
Foxhome	3	0-10	10-20	1.35-1.50	2.00-6.00	0.13-0.18	0.0-2.9	3.0-7.0	.20	.20	3	3	86
		10-15	2-10	1.45-1.60	6.00-20	0.07-0.12	0.0-2.9	0.5-1.0	.20	.20	ĺ	ĺ	ĺ
		15-23	1-5	1.50-1.70	6.00-20	0.02-0.07	0.0-2.9	0.5-1.0	.05	.15			
		23-80	12-35	1.40-1.70	0.60-2.00	0.15-0.22	0.0-2.9	0.0-0.5	.32	.37			!
433:		 		 			 		l I		 	 	l I
Syrene, depressional	85	0-12	8-18	  1.25-1.45	2.00-6.00	0.13-0.18	0.0-2.9	3.0-10	.20	.20	3	   3	86
byrone, doprobbronar		12-18	1	1.30-1.50		0.15-0.19	1	0.0-1.0	.37	.37		İ	
		18-80	1	1.50-1.70		0.02-0.04	1	0.0-0.5	.10	.10		İ	İ
_									ļ				
Deerwood	5	0-14	1		0.60-6.00	0.35-0.45	1	50-90			5	2	134
		14-16	1	1.20-1.70		0.09-0.17	1	4.0-10	.17	.17			
		16-80 	0-10	1.50-1.70	6.00-20	0.02-0.07	0.0-2.9	0.5-2.0	.17	.17	l I	 	l I
Rosewood	5	0-11	8-18	1.20-1.40	2.00-6.00	0.13-0.18	0.0-2.9	4.0-7.0	.24	.24	3	3	86
		11-19	6-18	1.20-1.40	2.00-6.00	0.11-0.15	0.0-2.9	1.0-3.0	.24	.24	ĺ	İ	ĺ
		19-65	1-6	1.45-1.65	6.00-20	0.05-0.08	0.0-2.9	0.0-0.5	.15	.15	ĺ	ĺ	ĺ
		65-80	1-6	1.40-1.65	6.00-20	0.02-0.07	0.0-2.9	0.0-0.5	.15	.15	ĺ	ĺ	į
Syrene	5	   0-11	0_10	  1 25_1 45	2.00-6.00	0.13-0.18	0 0-2 9	3.0-8.0	.20	.20	   3	   3	   86
Byrene	3	11-19	1		2.00-6.00	0.15-0.19	1	0.0-2.0	.37	.37	3	3	00
		19-80	,	1.50-1.70		0.02-0.04		0.0-0.5	.10	.10			
							!		ļ	ļ	ļ	!	
435:													
Syrene	85	0-11	1		2.00-6.00	0.13-0.18		3.0-8.0	.20	.20	3	3	86
		11-19   19-80	1	1.30-1.50   1.50-1.70	2.00-6.00	0.15-0.19		0.0-2.0	.37	.37			
		19-80 	2-10	1.50-1.70  	6.00-20	0.02-0.04	0.0-2.9	0.0-0.5	.10	.10	 	 	l I
Rosewood	5	0-11	8-18	1.20-1.40	2.00-6.00	0.13-0.18	0.0-2.9	4.0-7.0	.24	.24	3	3	86
		11-19	6-18	1.20-1.40	2.00-6.00	0.11-0.15	0.0-2.9	1.0-3.0	.24	.24	ĺ	ĺ	ĺ
		19-65	1-6	1.45-1.65	6.00-20	0.05-0.08	0.0-2.9	0.0-0.5	.15	.15			
		65-80	1-6	1.40-1.65	6.00-20	0.02-0.07	0.0-2.9	0.0-0.5	.15	.15			
Syrene, depressional	5	   0-12	   8-18	  1 25-1 45	2.00-6.00	0.13-0.18	0.0-2.9	3.0-10	.20	.20	   3	   3	   86
byrone, doprobbronar		12-18	1	1.30-1.50		0.15-0.19	1	0.0-1.0	.37	.37		İ	
		18-80	1	1.50-1.70		0.02-0.04	1	0.0-0.5	.10	.10			
							!		ļ	ļ	ļ	!	
Karlsruhe	3	0-8	1		2.00-6.00	0.10-0.15		4.0-7.0	.20	.20	5	3	86
		8-16	1	1.20-1.50		0.09-0.14	1	1.0-3.0	.20	.20			ļ
		16-80 	U-5 	1.30-1.60  	6.00-40	0.02-0.07	U.U-2.9 	0.0-0.5	.10	.15	 	 	 
Deerwood	2	0-14	0-0	0.10-0.30	0.60-6.00	0.35-0.45		50-90			5	2	134
i		14-16	2-18	1.20-1.70	2.00-20	0.09-0.17	0.0-2.9	4.0-10	.17	.17	İ	İ	İ
		16-80		1.50-1.70		0.02-0.07	0.0-2.9	0.5-2.0	.17	.17		i	1

Table 24.--Physical Properties of the Soils--Continued

Table 24.--Physical Properties of the Soils--Continued

Map symbol and component name	Percent of	Depth	   Clay	   Moist   bulk	Permea- bility	  Available   water	Linear	   Organic   matter	Erosi	on fac	tors	erodi-	Wind  erodi-  bility
component name	map unit	 	 	density	DITICY	capacity	bility	Maccel	Kw	Kf	   т	group	
		In	Pct	g/cc	In/hr	In/in	Pct	Pct			<u> </u>		
439:	 	 	 	 			 	 		 	 		
Strathcona	85	0-10	5-18	1.25-1.45	2.00-6.00	0.14-0.17	0.0-2.9	3.0-6.0	.20	.20	3	3	86
	ĺ	10-17	10-18	1.30-1.50	2.00-6.00	0.14-0.16	0.0-2.9	0.5-1.0	.24	.24		İ	İ
		17-28	1	1.35-1.60		0.05-0.09		0.0-0.5	.10	.10			
	 	28-80	15-30	1.40-1.60	0.20-2.00	0.14-0.18	3.0-5.9	0.0-0.5	.32	.32			
Northwood	   5	0-11		0.18-0.25	2.00-6.00	0.35-0.45		50-85			   5	2	134
		11-16	3-18	1.45-1.65	2.00-20	0.09-0.17	0.0-2.9	1.0-3.0	.15	.15			
		16-25	1-10	1.55-1.70		0.06-0.11	0.0-2.9	0.0-0.5	.15	.15			
	 	25-80	7-30	1.40-1.75	0.60-2.00	0.14-0.19	3.0-5.9	0.0-0.5	.37	.37			
Percy	   5	   0-10	10-30	  1.30-1.60	0.60-2.00	0.18-0.22	3.0-5.9	4.0-9.0	.24	.28	   5	5	56
	ĺ	10-25	10-18	1.30-1.60	0.60-2.00	0.15-0.19	0.0-2.9	0.5-1.0	.24	.28		İ	İ
		25-80	7-18	1.60-1.80	0.60-2.00	0.12-0.19	0.0-2.9	0.0-0.5	.24	.28			
Grimstad	   3	   0-10	10-18	  1.30-1.45	2.00-6.00	0.13-0.18	0.0-2.9	2.0-4.0	.20	.20	   5	3	   86
	İ	10-30	2-15	1.45-1.60	6.00-20	0.08-0.14	0.0-2.9	1.0-2.0	.20	.20	İ	İ	İ
		30-80	10-30	1.50-1.65	0.60-2.00	0.11-0.19	0.0-2.9	0.0-0.5	.37	.37		İ	
Strandquist	   2	   0-8	   10-25	  1.20-1.70	0.60-2.00	0.14-0.18	3.0-5.9	2.0-6.0	.28	.32	   3	   4L	   86
-	İ	8-35	1-8	1.50-1.70	6.00-20	0.03-0.05	0.0-2.9	1.0-3.0	.10	.15	İ	İ	İ
	į	35-80	15-30	1.30-1.65	0.60-2.00	0.12-0.19	3.0-5.9	0.0-0.5	.37	.37		į	į
481:	 	 	 	 			 	 	 	 	 	 	l I
Kratka	85	0-8	5-15	1.20-1.50	2.00-6.00	0.13-0.18	0.0-2.9	2.0-5.0	.20	.20	3	3	86
	İ	8-22	2-10	1.30-1.60	6.00-20	0.06-0.11	0.0-2.9	0.5-1.0	.17	.17	İ	İ	İ
		22-80	10-30	1.50-1.80	0.20-2.00	0.11-0.19	3.0-5.9	0.0-0.5	.37	.37		į	į
Northwood	   5	   0-11	 	  0.18-0.25	2.00-6.00	0.35-0.45	 	   50-85		 	   5	   2	134
	İ	11-16	3-18	1.45-1.65	2.00-20	0.09-0.17	0.0-2.9	1.0-3.0	.15	.15	İ	İ	İ
	ĺ	16-25	1-10	1.55-1.70	6.00-20	0.06-0.11	0.0-2.9	0.0-0.5	.15	.15		İ	İ
		25-80	7-30	1.40-1.75	0.60-2.00	0.14-0.19	3.0-5.9	0.0-0.5	.37	.37			
Percy	   5	   0-10	10-30	  1.30-1.60	0.60-2.00	0.18-0.22	3.0-5.9	4.0-9.0	.24	.28	   5	   5	56
-	İ	10-25	10-18	1.30-1.60	0.60-2.00	0.15-0.19	0.0-2.9	0.5-1.0	.24	.28	İ	İ	İ
		25-80	7-18	1.60-1.80	0.60-2.00	0.12-0.19	0.0-2.9	0.0-0.5	.24	.28		İ	
Enstrom	   3	   0-6	   4-15	  1.30-1.50	6.00-20	0.10-0.12	0.0-2.9	0.5-4.0		   .17	   5	   2	134
	İ	6-29		1.40-1.65	6.00-20	0.06-0.08		0.0-0.5	.15	.15	İ	j	İ
		29-80	10-35	1.50-1.65	0.20-2.00	0.17-0.20	3.0-5.9	0.0-0.5	.37	.37			į
Strandquist	   2	   0-8	   10-25	  1.20-1.70	0.60-2.00	0.14-0.18	3.0-5.9	   2.0-6.0	.28	   .32	   3	   4L	   86
• • • • • • • • • • • • • • • • • • • •	İ	8-35		1.50-1.70		0.03-0.05		1.0-3.0	.10	.15		İ	
	İ	35-80	15-30	1.30-1.65	0.60-2.00	0.12-0.19	3.0-5.9	0.0-0.5	.37	.37		İ	İ
	İ		İ	İ		İ	İ	İ	İ	i		İ	İ

Map symbol and	   Percent	   Depth	   Clay	   Moist	Permea-	  Available	   Linear	   Organic	Erosi	on fac	tors	Wind  erodi-	Wind  erodi-
component name	of map unit	 	 	bulk density	bility 	water capacity	extensi- bility	matter	   Kw	   Kf	   T	bility  group	
		In	Pct	g/cc	In/hr	In/in	Pct	Pct	[	Ţ.	ļ	[	ļ
482:	 		 	 	 	 	 	 				 	 
Grygla	85	0-6	2-15	1.40-1.60	6.00-20	0.13-0.15	0.0-2.9	1.0-4.0	.15	.15	5	2	134
		6-26	1	1.50-1.70		0.06-0.11		0.5-1.0	.15	.15			[
	 	26-80	8-27	1.30-1.75	0.20-2.00	0.17-0.19	3.0-5.9	0.0-0.5	.37	.37			
Chilgren	   5	0-5	5-18	1.30-1.60	2.00-6.00	0.16-0.18	0.0-2.9	1.0-3.0	.28	.28	5	3	86
		5-9	2-18	1.40-1.60	0.60-2.00	0.13-0.22	0.0-2.9	0.5-1.0	.28	.28			
		9-16	1	1.30-1.70		0.18-0.22		0.0-0.5	.28	.28			
	 	16-80	10-27	1.30-1.75	0.60-2.00	0.14-0.19	0.0-2.9	0.0-0.5	.28	.28			
Grygla, depressional	   5	0-5	2-15	1.40-1.60	   6.00-20	0.10-0.15	0.0-2.9	1.0-10	.15	.15	5	2	134
		5-36	1-10	1.50-1.70	6.00-20	0.06-0.11	0.0-2.9	0.0-1.0	.15	.15	İ	İ	İ
		36-80	8-27	1.30-1.75	0.20-2.00	0.17-0.19	3.0-5.9	0.0-0.5	.37	.37			
Enstrom	   3	   0-6	4-15	  1.30-1.50	   6.00-20	  0.10-0.12	0.0-2.9	0.5-4.0	.17	.17	5	2	134
	İ	6-29	1-12	1.40-1.65	6.00-20	0.06-0.08	0.0-2.9	0.0-0.5	.15	.15	İ	į	į
		29-80	10-35	1.50-1.65	0.20-2.00	0.17-0.20	3.0-5.9	0.0-0.5	.37	.37			
Northwood	   2	   0-11		0.18-0.25	   2.00-6.00	  0.35-0.45	 	50-85			5	   2	134
		11-16	3-18	1.45-1.65	2.00-20	0.09-0.17	0.0-2.9	1.0-3.0	.15	.15	İ	į	į
		16-25	1	1.55-1.70		0.06-0.11	0.0-2.9	0.0-0.5	.15	1.15			
	 	25-80	7-30	1.40-1.75	0.60-2.00	0.14-0.19	3.0-5.9	0.0-0.5	.37	.37			
532:							 						
Sago	90	0-14	1	0.15-0.25		0.35-0.45		50-95			5	2	134
	 	14-80	6-18	1.50-1.70	0.60-2.00	0.14-0.20	0.0-2.9	0.0-2.0	.28	.28			
Cathro	   5	0-8		0.15-0.35	0.20-6.00	0.45-0.55	 	60-85			2	2	134
		8-40		0.15-0.30	0.20-6.00	0.35-0.45		60-85					
		40-80	10-30	1.50-1.70	0.20-2.00	0.11-0.19	0.0-2.9	1.0-5.0	.20	.24			
Zippel	   5	   0-10	10-18	1.35-1.50	2.00-6.00	  0.16-0.22	0.0-2.9	2.0-6.0	.28	.28	5	3	86
		10-16	5-18	1.40-1.55	2.00-6.00	0.15-0.20	0.0-2.9	0.0-1.0	.37	.37	İ	İ	İ
		16-80	5-18	1.40-1.55	2.00-6.00	0.15-0.20	0.0-2.9	0.0-0.5	.37	.37			
534:	 			 	 	 	 	 					
Mooselake	90	0-16		0.05-0.25	0.60-6.00	0.35-0.55		25-99			3	5	56
		16-80		0.10-0.20	0.60-6.00	0.40-0.50		25-99					
Bullwinkle	   4	   0-16	0-0	0.15-0.35	0.20-6.00	0.35-0.48	 	60-85			2	2	134
	İ	16-48	0-0	0.15-0.35	2.00-6.00	0.35-0.48	i	60-85	j		İ	į	į
		48-80	15-25	1.15-1.30	0.60-2.00	0.20-0.22	3.0-5.9	0.0-0.5	.43	.43			
Dora	   3	   0-8		0.15-0.35	   0.60-6.00	  0.35-0.55	 	21-90			2	2	134
	İ	8-26		0.15-0.35	0.60-6.00	0.35-0.55	i	21-90	j	j	İ	İ	İ
		26-80	35-70	1.40-1.65	0.0000-0.06	0.10-0.20	6.0-8.9	0.0-0.5	.32	.32			

Table 24.--Physical Properties of the Soils--Continued

Table 24.--Physical Properties of the Soils--Continued

Map symbol and	Percent	   Depth	   Clay	   Moist	Permea-	  Available		   Organic	Erosi	on fac	tors	erodi-	Wind  erodi-
component name	of			bulk	bility	water	extensi-	matter				-	bility
	map unit	<u> </u>	<u> </u>	density		capacity	bility		Kw	Kf	T	group	index
		In	Pct	g/cc	In/hr	In/in	Pct	Pct			 		
534:													
Tawas	3	0-10				0.35-0.45	l .	40-60			2	2	134
		10-27	1	0.15-0.35		0.35-0.45	1	40-60					
		27-80	0-10	1.40-1.65	6.00-20	0.03-0.10	0.0-2.9		.15	.15	 		
540:													İ
Seelyeville	90	0-12		0.10-0.25	0.20-6.00	0.35-0.45		25-99			3	2	134
		12-80		0.10-0.25	0.20-6.00	0.35-0.45		25-99					
Cathro	   <b>4</b>	0-8		0.15-0.35	   0.20-6.00	  0.45-0.55		60-85		 	   2	2	134
	i	8-40	j	0.15-0.30	0.20-6.00	0.35-0.45		60-85	j		i	į	i
	į	40-80	10-30	1.50-1.70	0.20-2.00	0.11-0.19	0.0-2.9	1.0-5.0	.20	.24	į	į	į
Dora	  -  3	   0-5		  0 15-0 35	   0.60-6.00	  0.35-0.55	 	21-90		 	   2	2	134
2024		5-31	1			0.35-0.55	1	21-90	i		i -	i -	-5-
	i	31-80	1		0.0000-0.06		1	0.0-0.5	.32	.32	i		i
	İ	į	į	į	İ	į	į	į	į	j	i	į	į
Markey	3	0-42		0.15-0.35	0.20-6.00	0.35-0.45		55-85			2	2	134
		42-80	0-10	1.40-1.65	6.00-20	0.03-0.08	0.0-2.9	0.0-0.5	.15	.15			
541:						l İ	l İ				 		
Rifle	90	0-8	j	0.10-0.25	0.60-6.00	0.48-0.58	j	75-99	j		3	5	56
		8-80		0.08-0.20	0.60-6.00	0.48-0.58		25-99					
Tacoosh	   10	   0-17	0-0	0.10-0.20	   0.60-6.00	  0.45-0.55	 	   75-99			   2	   5	   56
		17-33	0-0	0.10-0.20		0.45-0.55		75-99	i		i	i	i
	į	33-80	15-35	1.40-1.65	0.20-2.00	0.16-0.22	3.0-5.9	0.0-0.5	.43	.43	į	į	į
543:											 		
Markey	·  90	0-42		0.15-0.35	0.20-6.00	0.35-0.45		55-85			   2	1 2	134
narncy		42-80	1	1.40-1.65		0.03-0.08	1	0.0-0.5	.15	.15	-	-	131
Cormant		   0-6		  1.30-1.50		  0.08-0.12	0.0-2.9	2.0-10					124
Cormant	5	0-6   6-80		1.50-1.50		0.08-0.12		0.5-1.0	1.17	1.17	5	2	134
		6-80	0-5	1.50-1.70	6.00-20		0.0-2.9	0.5-1.0	.1/	•1/	 		
Seelyeville	5	0-12		0.10-0.25	0.20-6.00	0.35-0.45	i	25-99	j		3	2	134
	į	12-80		0.10-0.25	0.20-6.00	0.35-0.45		25-99			ļ		
544:		 	 	 		 	 			 	 	 	 
Cathro	90	0-8		0.15-0.35	0.20-6.00	0.45-0.55		60-85			2	2	134
-	İ	8-40		0.15-0.30		0.35-0.45		60-85	i		i	İ	İ
	į	40-80	10-30	1.50-1.70	0.20-2.00	0.11-0.19	0.0-2.9	1.0-5.0	.20	.24	į		į
Percy, very cobbly	  -  4	   0-8	10-30	1 30-1 60	   0.60-2.00	  0.18-0.22	3 0-5 9	4.0-9.0	.24		   5	   5	56
rercy, very compry	1 <b>3</b>	8-23	1			0.18-0.22		0.5-1.0	.24	.28	5 	3	30
		23-80				0.12-0.19		0.0-0.5	.24	.28	i		i
	İ								İ		i	İ	İ
						[	[						

Map symbol and	Percent	   Depth	   Clay	   Moist	   Permea-	  Available	   Linear	   Organic	Erosi	on fac	tors	Wind  erodi-	Wind  erodi
component name	of map unit	 	 	bulk density	bility	water capacity	extensi-	matter	Kw	   Kf	   T	bility	
	-	In	Pct	g/cc	In/hr	In/in	Pct	Pct	<u> </u>		İ		i i
544:		 			 		  -	 				 	
Grygla	3	0-6	2-15	1.40-1.60	6.00-20	0.13-0.15	0.0-2.9	1.0-4.0	.15	.15	5	2	134
İ		6-26	1-10	1.50-1.70	6.00-20	0.06-0.11	0.0-2.9	0.5-1.0	.15	.15	ĺ	ĺ	İ
ļ		26-80	8-27	1.30-1.75	0.20-2.00	0.17-0.19	3.0-5.9	0.0-0.5	.37	.37	į		İ
  Seelyeville	3	   0-12		  0.10-0.25	   0.20-6.00	  0.35-0.45	 	   25-99		 	   3	   2	134
		12-80		0.10-0.25	0.20-6.00	0.35-0.45		25-99				į	
546:		 		 			 	 				 	
Lupton	90	0-16	0-0	0.10-0.35	0.20-6.00	0.35-0.45		70-90			3	2	134
į		16-80	0-0	0.10-0.35	0.20-6.00	0.35-0.45		j			į	į	į
  Bullwinkle	4	   0-16	0-0	  0.15-0.35	   0.20-6.00	  0.35-0.48	 	   60-85		 	   2	   2	134
i		16-48	0-0	0.15-0.35		0.35-0.48	i	60-85	i		i	İ	i
į		48-80	15-25	1.15-1.30	0.60-2.00	0.20-0.22	3.0-5.9	0.0-0.5	.43	.43	į	į	į
   Dora	3	   0-8		  0.15-0.35	   0.60-6.00	  0.35-0.55	 	   21-90		 	   2	   2	134
i		8-26		0.15-0.35	0.60-6.00	0.35-0.55	i	21-90	i		İ	İ	i
į		26-80	35-70	1.40-1.65	0.0000-0.06	0.10-0.20	6.0-8.9	0.0-0.5	.32	.32	į	į	į
  Tawas	3	   0-10		  0.15-0.35	   0.20-6.00	  0.35-0.45	 	40-60		 	2	   2	134
į		10-27		0.15-0.35	0.20-6.00	0.35-0.45		40-60	i		ĺ	İ	İ
ļ		27-80	0-10	1.40-1.65	6.00-20	0.03-0.10	0.0-2.9		.15	.15	İ		
547:		 						 				 	
Deerwood	90	0-14	0-0	0.10-0.30	0.60-6.00	0.35-0.45		50-90	i		5	2	134
I		14-16	2-18	1.20-1.70	2.00-20	0.09-0.17	0.0-2.9	4.0-10	.17	.17			
		16-80	0-10	1.50-1.70	6.00-20	0.02-0.07	0.0-2.9	0.5-2.0	.17	.17		 	
Markey	4	0-42		0.15-0.35	0.20-6.00	  0.35-0.45	 	55-85			2	2	134
		42-80	0-10	1.40-1.65	6.00-20	0.03-0.08	0.0-2.9	0.0-0.5	.15	.15		 	
Rosewood	3	   0-11	8-18	1.20-1.40	   2.00-6.00	  0.13-0.18	0.0-2.9	4.0-7.0	.24	.24	3	   3	86
I		11-19	6-18	1.20-1.40	2.00-6.00	0.11-0.15	0.0-2.9	1.0-3.0	.24	.24			
I		19-65	1-6	1.45-1.65	6.00-20	0.05-0.08	0.0-2.9	0.0-0.5	.15	.15			
		65-80	1-6	1.40-1.65	6.00-20	0.02-0.07	0.0-2.9	0.0-0.5	.15	.15		 	
Syrene	3	   0-11	8-18	1.25-1.45	2.00-6.00	0.13-0.18	0.0-2.9	3.0-8.0	.20	.20	3	   3	86
I		11-19				0.15-0.19		0.0-2.0	.37	.37			
		19-80	2-10	1.50-1.70	6.00-20	0.02-0.04	0.0-2.9	0.0-0.5	.10	.10		 	
550:		 			 	! 	 						
Dora	90	0-5		0.15-0.35	0.60-6.00	0.35-0.55		21-90			2	2	134
I		5-31	1			0.35-0.55		21-90					1
		31-80	35-70	1.40-1.65	0.0000-0.06	0.10-0.20	6.0-8.9	0.0-0.5	.32	.32			

Table 24.--Physical Properties of the Soils--Continued

Table 24.--Physical Properties of the Soils--Continued

Map symbol and component name	Percent of	   Depth	   Clay	   Moist   bulk	Permea-   bility	  Available   water	Linear	   Organic   matter	Erosi	on fac	tors		Wind  erodi-
component name	map unit	 	 	density	Dility	capacity	bility	matter	Kw	   Kf	   ••		bility  index
		In	Pct	g/cc	In/hr	In/in	Pct	Pct	KW		-	 	
550:	 	 		 		 	 	 		 	 		 
Boash	4	0-9	30-40	1.10-1.40	0.06-0.20	0.13-0.17	6.0-8.9	3.0-6.0	.32	.32	5	4	86
	ĺ	9-29	35-60	1.10-1.40	0.06-0.20	0.15-0.20	6.0-8.9	1.0-3.0	.32	.32	ĺ	İ	İ
		29-80	16-35	1.20-1.60	0.60-2.00	0.12-0.18	3.0-5.9	0.0-0.5	.32	.32			
Seelyeville	   3	   0-12		0.10-0.25	0.20-6.00	  0.35-0.45	 	   25-99		 	   3	2	134
		12-80		0.10-0.25	0.20-6.00	0.35-0.45		25-99					
Woodslake	   3	   0-8	41-65	1.45-1.65	   0.06-0.60	  0.10-0.14	6.0-8.9	3.0-5.0	.28	.28	   5	4	   86
		8-15	60-85	1.35-1.45	0.0000-0.06	0.09-0.13	6.0-8.9	0.5-1.0	.28	.28			
		15-36	1		0.02-0.06	0.09-0.13	6.0-8.9	0.0-0.5	.28	.28			
	 	36-80	25-50	1.30-1.45	0.02-0.06	0.09-0.22	6.0-8.9	0.0-0.5	.43	.43	 		
561:		 											
Bullwinkle	90	0-16				0.35-0.48	1	60-85			2	2	134
		16-48	1	1		0.35-0.48	1	60-85					
	 	48-80	15-25	1.15-1.30	0.60-2.00	0.20-0.22	3.0-5.9	0.0-0.5	.43	.43	 		
Lupton	4	0-16	0-0	0.10-0.35	0.20-6.00	0.35-0.45		70-90			3	2	134
		16-80	0 - 0	0.10-0.35	0.20-6.00	0.35-0.45							
Northwood, wooded	   4	   0-15	 	0.18-0.25	   2.00-6.00	0.35-0.45	 	50-85		 	   5	2	134
	ĺ	15-21	3-18	1.45-1.65	2.00-20	0.09-0.17	0.0-2.9	1.0-3.0	.15	.15	ĺ	İ	İ
		21-39	1-10	1.55-1.70	6.00-20	0.06-0.11	0.0-2.9	0.0-0.5	.15	.15			
	 	39-80	7-30	1.40-1.75	0.60-2.00	0.14-0.19	3.0-5.9	0.0-0.5	.37	.37	 		
Chilgren	2	   0-5	5-18	1.30-1.60	2.00-6.00	0.16-0.18	0.0-2.9	1.0-3.0	.28	.28	   5	3	86
		5-9	1	1	0.60-2.00	0.13-0.22		0.5-1.0	.28	.28			
	!	9-16				0.18-0.22		0.0-0.5	.28	.28	!		!
	 	16-80 	10-27	1.30-1.75	0.60-2.00	0.14-0.19	0.0-2.9	0.0-0.5	.28	.28	 		
563:	İ		İ	İ					İ		İ		i
Northwood	90	0-11	,		2.00-6.00			50-85			5	2	134
		11-16		1.45-1.65		0.09-0.17		1.0-3.0	.15	.15	ļ		!
		16-25	1	1.55-1.70		0.06-0.11		0.0-0.5	.15	.15			
	 	25-80 	7-30	1.40-1.75 	0.60-2.00	0.14-0.19 	3.0-5.9	0.0-0.5	.37	.37 	 		 
Grygla	4	0-6	1	1.40-1.60		0.13-0.15		1.0-4.0	.15	.15	5	2	134
		6-26	1	1.50-1.70		0.06-0.11		0.5-1.0	1.15	.15			
	 	26-80	8-27	1.30-1.75	0.20-2.00	0.17-0.19	3.0-5.9	0.0-0.5	.37	.37	 		 
Berner	   3	0-23		0.15-0.35	0.20-6.00	0.35-0.48	 	   80-95			2	2	134
		23-41	0-5	1.50-1.75	6.00-20	0.05-0.10	0.0-2.9	0.0-0.5	.05	.15			
		41-80	10-27	1.45-1.65	0.20-2.00	0.14-0.22	3.0-5.9	0.0-0.5	.32	.37			
	I	1	1	I		I	I	I	1	1	I		1

Map symbol and component name	Percent of	   Depth	   Clay	   Moist   bulk	Permea- bility	Available water	   Linear  extensi-	   Organic   matter	Erosi	on fac	tors		Wind  erodi-
	map unit	! 	<u> </u>	density	211107	capacity	bility		Kw	Kf	т	group	-
	-	In	Pct	g/cc	In/hr	In/in	Pct	Pct	İ		İ		<u> </u>
563:		 	 	 	 	 	 	 				 	 
Strandquist	3	0-8	10-25	1.20-1.70	0.60-2.00	0.14-0.18	3.0-5.9	2.0-6.0	.28	.32	3	4L	86
		8-35	1-8	1.50-1.70	6.00-20	0.03-0.05	0.0-2.9	1.0-3.0	.10	.15			
		35-80	15-30	1.30-1.65	0.60-2.00	0.12-0.19	3.0-5.9	0.0-0.5	.37	.37			
565:		 		 	 								 
Eckvoll	85	0-6	5-15	1.30-1.70	6.00-20	0.10-0.12	0.0-2.9	1.0-3.0	.17	.17	5	2	134
		6-21	2-10	1.30-1.70	6.00-20	0.06-0.08	0.0-2.9	0.5-1.0	.15	.15			
		21-26	18-35	1.40-1.70	0.20-2.00	0.16-0.18	3.0-5.9	0.0-0.5	.37	.37			
		26-80	16-32	1.30-1.70	0.20-2.00	0.17-0.19	3.0-5.9	0.0-0.5	.37	.37			
Chilgren	5	   0-5	   5-18	  1.30-1.60	   2.00-6.00	0.16-0.18	0.0-2.9	1.0-3.0	.28	.28	   5	   3	   86
i		5-9	2-18	1.40-1.60	0.60-2.00	0.13-0.22	0.0-2.9	0.5-1.0	.28	.28	İ	į	į
İ		9-16	18-35	1.30-1.70	0.60-2.00	0.18-0.22	3.0-5.9	0.0-0.5	.28	.28	ĺ	į	į
		16-80	10-27	1.30-1.75	0.60-2.00	0.14-0.19	0.0-2.9	0.0-0.5	.28	.28	į	į	ĺ
Grygla	5	   0-6	   2-15	  1.40-1.60	   6.00-20	  0.13-0.15	0.0-2.9	1.0-4.0	1.15	1.15	   5	   2	   134
i		6-26	1-10	1.50-1.70	6.00-20	0.06-0.11	0.0-2.9	0.5-1.0	.15	.15	i	i	į
		26-80	8-27	1.30-1.75	0.20-2.00	0.17-0.19	3.0-5.9	0.0-0.5	.37	.37	į	į	į
Hiwood	5	   0-3	   1-5	  1.40-1.60	   6.00-20	  0.08-0.12	0.0-2.9	0.5-2.0	1.15	   .15	   5	   1	   250
		3-22		1.55-1.70		0.07-0.10		0.0-0.5	.15	.15		i	
		22-80		1.55-1.70		0.05-0.08	0.0-2.9	0.0-0.5	.15	.15	į	į	ĺ
568:		 		 	 	 	 	 					 
Zippel	85	0-10	10-18	1.35-1.50	2.00-6.00	0.16-0.22	0.0-2.9	2.0-6.0	.28	.28	5	3	86
		10-16			2.00-6.00	0.15-0.20		0.0-1.0	.37	.37	i		
		16-80		1.40-1.55	1	0.15-0.20		0.0-0.5	.37	.37	į		į
Augsburg, depressional	5	   0-9	   10-27	  1.20-1.40	   0.60-2.00	  0.20-0.23	0.0-2.9	5.0-8.0	.28	.28	   5	   4L	   86
3, 11		9-16		1	'	0.20-0.23		1.0-3.0	.28	.28		i	
i		16-32		1	1	0.17-0.22		0.5-1.0	.28	.28	i	i	İ
		32-80		1	0.0000-0.20			0.0-0.5	.28	.28	į	į	ĺ
Sago	5	   0-14	 	  0.15-0.25	   0.60-6.00	  0.35-0.45	0.0-2.9	   50-95		 	   5	   2	   134
	-	14-80		1.50-1.70		0.14-0.20		0.0-2.0	.28	.28		i -	
Skime	5	   0-6	   5-10	  1.35-1.50	   6.00-20	0.08-0.12	0.0-2.9	0.5-2.0		   .17	   5	   2	   134
	-	6-17		1.35-1.50		0.08-0.11		0.0-1.0	1.15	.15		_	101
		17-22		1	2.00-6.00			0.0-0.5	.24	.24		! 	İ
		22-72		1.50-1.70		0.05-0.08		0.0-0.5	1.15	.15	i	<u> </u>	İ
		72-80		1.50-1.70		0.05-0.22		0.0-0.5	1.15	1.15	i	<u> </u>	İ
			, <u> </u>	<b></b>	<b></b>						i	i	İ

Table 24.--Physical Properties of the Soils--Continued

Table 24.--Physical Properties of the Soils--Continued

Map symbol and	Percent of	   Depth	   Clay	Moist	Permea-	  Available		   Organic	Erosi	on fac		erodi-	Wind  erodi-
component name	of map unit	 		bulk   density	bility	water  capacity	extensi-	matter	Kw	   Kf		bility  group	bility  index
	map unit	l In	   Pct	density	In/hr	In/in	Pct	Pct	KW	KI	T	group	Index
	 	111	FCC	<b>9</b> /66	111/111	111/111	FCC	FCC	1	 	 	 	l I
569:		İ	i	İ		İ	i	i	i	i	ĺ	İ	İ
Wabanica	85	0-8	15-27	1.35-1.55	0.60-2.00	0.17-0.22	0.0-2.9	2.0-4.0	.28	.28	5	4L	86
		8-19	18-35	1.35-1.60	0.60-2.00	0.17-0.22	0.0-2.9	0.5-1.0	.28	.28			
		19-80	18-35	1.45-1.65	0.60-2.00	0.17-0.22	0.0-2.9	0.0-0.5	.28	.28			
Warroad	   6	   0-11	   5-15	  1 25_1 35	2.00-6.00	0.13-0.18	0.0-2.9	2.0-5.0	.24	1.24	   3	   3	   86
Walloud	l o	11-26		1.45-1.60		0.05-0.11		0.5-1.0	.17	.17		]	00
	 	26-80		1.15-1.30		0.19-0.21		0.0-0.5	.43	.43	İ	<u> </u>	 
	İ		İ	İ		İ	İ	ĺ			ĺ	İ	İ
Sax	4	0-15	0-1	0.15-0.25	0.20-6.00	0.35-0.45		25-70			5	2	134
		15-24	18-35	1.30-1.50	0.60-2.00	0.17-0.22	0.0-2.9	1.0-15	.28	.28			
		24-39	18-35	1.30-1.50	0.60-2.00	0.17-0.22	0.0-2.9	0.5-1.0	.43	.43			
		39-71	10-35	1.30-1.55	0.60-2.00	0.14-0.22	0.0-2.9	0.0-0.5	.43	.43			
		71-80	27-60	1.30-1.60	0.06-0.60	0.09-0.19	6.0-8.9	0.0-0.5	.43	.43			
Grano	   3	   0-11	   10-27	  1.30-1.60	0.60-6.00	0.10-0.16	0.0-2.9	2.0-5.0	.24	.24	   5	   5	   56
	İ	11-41		1.20-1.50		0.15-0.18		1.0-3.0	.32	.32	-		
		41-80	1	1.20-1.60		0.15-0.18		0.0-0.5	.32	.32	İ	İ	į
Enstrom	2	0-6		1.30-1.50		0.10-0.12		0.5-4.0	.17	.17	5	2	134
		6-29	1	1.40-1.65		0.06-0.08		0.0-0.5	.15	.15	ļ		
	 	29-80	10-35	1.50-1.65	0.20-2.00	0.17-0.20	3.0-5.9	0.0-0.5	.37	.37			
570:	 	 	 	 			l İ	 		 	 	 	l I
Faunce	85	0-2	3-10	1.40-1.60	6.00-20	0.10-0.13	0.0-2.9	1.0-2.0	.17	.17	5	2	134
	İ	2-14	3-10	1.45-1.70	6.00-20	0.06-0.08	0.0-2.9	0.0-0.5	.10	.10	İ	į	į
		14-24	3-10	1.45-1.70	6.00-20	0.06-0.08	0.0-2.9	0.0-0.5	.10	.15	ĺ	İ	ĺ
		24-80	0-5	1.45-1.75	6.00-20	0.03-0.06	0.0-2.9	0.0-0.5	.10	.15			
Clearriver	   7	   0-2		  1.40-1.60	6 00 20	0.10-0.12	0.0-2.9	1.0-2.0		   .17	   5	   2	   134
Cleariver	, , I	0-2   2-21		1.55-1.70		0.10-0.12		0.0-0.5	1.15	1.15	5	4	1 134
	 	21-80		1.55-1.70		0.00-0.11		0.0-0.5	1.10	1.15	 	 	 
		00			0.00 =0						i	<u> </u>	İ
Zimmerman	4	0-6	2-5	1.45-1.65	6.00-20	0.07-0.09	0.0-2.9	0.5-1.0	.17	.17	5	1	220
	ĺ	6-80	2-10	1.50-1.70	6.00-20	0.06-0.10	0.0-2.9	0.0-0.5	.17	.17	į	İ	İ
Meehan	3	0-8		1		0.10-0.12		0.5-3.0	.17	.17	5	2	134
		8-31		1.60-1.70		0.06-0.11		0.0-0.5	.15	.15			
	 	31-80	1-4 	1.60-1.70	6.00-20	0.02-0.07	0.0-2.9	0.0-0.5	.15	1.15	l I	 	l I
Pits, gravel	1										-		
F01.													
581: Percy	   90	   0-11	10-20	  1.30-1.60	2.00-6.00	0.13-0.18	0.0-2-9	4.0-9.0	.24	   .28	   5	   3	   86
		11-15	1	1.30-1.60		0.15-0.19		0.5-1.0	.24	.28	i	i	
	İ	15-60			0.60-2.00	0.12-0.19		0.0-0.5	.24	.28	i	i	İ
			į	j		į	į	į	İ	i i	İ	į	İ

Map symbol and	Percent	Depth	   Clay	   Moist	Permea-	  Available		   Organic	Erosi	on fac	tors	erodi-	Wind  erodi
component name	of			bulk	bility	water	extensi-	matter		!	ļ	bility	
	map unit	In	Pct	density g/cc	In/hr	capacity In/in	bility   Pct	Pct	Kw	Kf	T	group	index
		111	PCC 	g/cc   	111/111	111/111	PCL 	PCL 			 		
581:		İ	į	j j		İ	İ	j	į	İ	į	İ	İ
Haug	5	0-10			0.60-6.00			50-90			5	2	134
		10-16			0.60-6.00	,		4.0-6.0	.20	.20			
		16-80	10-18	1.40-1.60	0.60-2.00	0.11-0.19	0.0-2.9	0.5-1.0	.20	.20			
Boash	3	0-9	30-40	  1.10-1.40	0.06-0.20	0.13-0.17	   6.0-8.9	3.0-6.0	.32	.32	5	4	86
		9-29	35-60	1.10-1.40	0.06-0.20	0.15-0.20	6.0-8.9	1.0-3.0	.32	.32	İ	İ	İ
		29-80	16-35	1.20-1.60	0.60-2.00	0.12-0.18	3.0-5.9	0.0-0.5	.32	.32			į
Skagen	   2	0 - 9	   10-18	  1 25-1 40	0.60-2.00	  0 16-0 18	   0 0-2 9	   4.0-9.0	.20	1.24	   5	   4L	86
brugen	_	9-19			0.60-6.00	1			.24	.28		1	
		19-80			0.60-6.00	1		1			İ	İ	İ
582:							 	 					
Roliss	85	0-14	   18-27	  1 10-1 50	0.60-2.00	0 17-0 24	   3.0-5.9	3.0-7.0	.28	.28	5	   4L	86
ROTIDD	03	14-20			0.20-2.00	1		1.0-3.0	.28	.28		1	
		20-80			0.20-2.00	1		0.5-1.0	1	.28	İ	İ	İ
P.1/ 1		0.0									   5		10
Roliss, depressional	7	0-8 8-13			0.20-2.00 0.20-0.60	1		3.0-8.0		.28	5	0	48
		13-80			0.20-0.60	1		0.5-1.0		.28	 		
	_		į	į į					į	į	į		į
Boash	5	0-9			0.06-0.20	1		3.0-6.0		1	5	4	86
		9-29 29-80			0.06-0.20	1		1	32	32	 		
			ĺ								İ	İ	İ
Haug	3	0-10	1		0.60-6.00	1	1	50-90			5	2	134
		10-16			0.60-6.00	1		4.0-6.0	1	.20			
		16-80	10-18	1.40-1.60	0.60-2.00	0.11-0.19	0.0-2.9	0.5-1.0	.20	.20			
583:			İ				! 	! 					
Nereson	85	0 - 7			2.00-6.00	1		4.0-6.0	.17	.20	5	3	86
		7-11			0.60-2.00	1		1					
		11-29			0.60-6.00	1		0.0-0.5	1	.28			
		29-80	12-18	1.50-1.65  	0.60-6.00	0.16-0.18	0.0-2.9	0.0-0.5	.24	.28	 		
Percy	10	0-10	10-30	  1.30-1.60	0.60-2.00	0.18-0.22	3.0-5.9	4.0-9.0	.24	.28	5	5	56
		10-25			0.60-2.00	1		0.5-1.0	.24	.28			
		25-80	7-18	1.60-1.80	0.60-2.00	0.12-0.19	0.0-2.9	0.0-0.5	.24	.28			
Pelan	3	0-6	   5-20	  1.35-1.55	2.00-6.00	0.10-0.13	0.0-2.9	0.5-3.0	.24	.24	   5	3	86
		6-12		1.50-1.65		0.05-0.11		0.5-1.0	.20	.24	İ	İ	İ
	l i	12-24	1-8	1.55-1.70	6.00-20	0.02-0.09	0.0-2.9	0.0-0.5	.20	.20			
	l i	24-60	8-18	1.40-1.75	0.60-2.00	0 14-0 18	0.0-2.9	0.0-0.5	.28	.28	1	I	1

Table 24.--Physical Properties of the Soils--Continued

Table 24.--Physical Properties of the Soils--Continued

Map symbol and	Percent	Depth	Clay	   Moist	Permea-	  Available		   Organic	Erosi	on fact	tors	erodi-	Wind  erodi-
component name	of map unit		 	bulk density	bility 	water  capacity	extensi- bility	matter	   Kw	   Kf	   T	bility	
	-	In	Pct	g/cc	In/hr	In/in	Pct	Pct	İ				<u> </u>
583 <b>:</b>				 	 	 	 	 		 	 		
Foxhome	2	0-10	10-20	1.35-1.50	2.00-6.00	0.13-0.18	0.0-2.9	3.0-7.0	.20	.20	3	3	86
i		10-15	2-10	1.45-1.60	6.00-20	0.07-0.12	0.0-2.9	0.5-1.0	.20	.20	İ	İ	İ
İ		15-23	1-5	1.50-1.70	6.00-20	0.02-0.07	0.0-2.9	0.5-1.0	.05	.15	ĺ	İ	ĺ
		23-80	12-35	1.40-1.70	0.60-2.00	0.15-0.22	0.0-2.9	0.0-0.5	.32	.37			
527 <b>:</b>			 	 	 	 	 	 		 	 		
Tawas	90	0-10	j	0.15-0.35	0.20-6.00	0.35-0.45	i	40-60	j	i	2	2	134
j		10-27		0.15-0.35	0.20-6.00	0.35-0.45	i	40-60			ĺ	İ	İ
		27-80	0-10	1.40-1.65	6.00-20	0.03-0.10	0.0-2.9		.15	.15			
Leafriver	4	0-10	 	0.10-0.25	   0.60-6.00	  0.35-0.50	 	   50-90		 	   5	2	134
i		10-13	3-18	1.40-1.65	2.00-20	0.08-0.14	0.0-2.9	5.0-20	.17	.17	i	į	i
İ		13-80	0-10	1.50-1.65	6.00-20	0.03-0.08	0.0-2.9	0.5-5.0	.17	.17		į	į
Lupton	4	0-16	   0-0	  0.10-0.35	   0.20-6.00	  0.35-0.45	 	   70-90		 	   3	   2	134
		16-80	0-0	0.10-0.35	0.20-6.00	0.35-0.45						į	
 	2	0-6	   3-10	  1.30-1.50	   6 00-20	  0.08-0.12	0.0-2.9	   2.0-10		   .17	   5	2	134
	-	6-80		1.50-1.70		0.06-0.10		0.5-1.0	.17	1.17		-	
630:			 	 	 	 	 	 		 	 		
Wildwood	90	0-12		0.10-0.25	0.20-6.00	0.35-0.45		25-99			5	2	134
!		12-33	35-75	1.35-1.45	0.06-0.20	0.00-0.04	6.0-8.9	0.0-0.5	.28	.28			
		33-80	50-75	1.40-1.55	0.0000-0.20	0.00-0.04	6.0-8.9	0.0-0.5	.28	.28			
Boash	4	0-9	30-40	  1.10-1.40	   0.06-0.20	  0.13-0.17	6.0-8.9	3.0-6.0	.32	.32	   5	   4	86
j		9-29	35-60	1.10-1.40	0.06-0.20	0.15-0.20	6.0-8.9	1.0-3.0	.32	.32	ĺ	İ	İ
		29-80	16-35	1.20-1.60	0.60-2.00	0.12-0.18	3.0-5.9	0.0-0.5	.32	.32			
Dora	4	0-5		0.15-0.35	   0.60-6.00	  0.35-0.55	 	21-90		 	   2	2	134
i		5-31		0.15-0.35	0.60-6.00	0.35-0.55	i	21-90			İ	İ	İ
		31-80	35-70	1.40-1.65	0.0000-0.06	0.10-0.20	6.0-8.9	0.0-0.5	.32	.32			
Espelie	2	0-10	   8-18	  1.30-1.45	   2.00-6.00	  0.13-0.18	0.0-2.9	2.0-4.0	.20	.20	   5	   3	86
		10-27	3-10	1.35-1.60	2.00-20	0.06-0.11	0.0-2.9	0.5-1.0	.17	.17	i	į	i
		27-80	35-60	1.35-1.60	0.06-0.20	0.09-0.19	6.0-8.9	0.0-0.5	.32	.32		į	į
643:			 	 	 	 	 	 		 	 		
Huot	85	0-14			1	0.13-0.18	1	2.0-4.0	.20	.20	5	3	86
1		14-26			2.00-6.00		t .	0.0-1.0	.20	.20			
		26-34		1.55-1.70		0.06-0.11	1	0.0-0.5	.20	.20			
		34-80	35-80	1 35-1 60	0.06-0.20	0.09-0.16	6.0-8.9	0.0-0.5	.32	.32		1	1

Map symbol and	Percent	Depth	Clay	   Moist	Permea-	  Available		Organic	Erosi	on fac	tors	erodi-	Wind  erodi-
component name	of map unit			bulk   density	bility 	water  capacity	extensi-	matter	   Kw	   Kf	   T	bility  group	
		In	Pct	g/cc	In/hr	In/in	Pct	Pct	1	<u> </u>	İ		
643:				 	 							 	
Thiefriver	12	0-10	8-18	1.30-1.45	2.00-6.00	0.13-0.18	0.0-2.9	2.0-4.0	.24	.24	5	3	86
		10-16	8-18	1.25-1.40	2.00-20	0.09-0.17	0.0-2.9	0.0-1.0	.28	.28	ĺ	İ	İ
		16-35	2-10	1.25-1.40	6.00-20	0.06-0.11	0.0-2.9	0.0-0.5	1.17	1.17			
	  -	35-80	35-70	1.35-1.60	0.06-0.20	0.09-0.19	6.0-8.9	0.0-0.5	.32	.32			
Redby	   3	0-3	2-10	1.40-1.60	6.00-20	0.08-0.12	0.0-2.9	0.5-2.0	.17	.17	5	2	134
		3-28	1-8	1.55-1.70	6.00-20	0.07-0.10	0.0-2.9	0.0-0.5	.17	.17	İ	İ	Ì
		28-80	0-6	1.55-1.70	6.00-20	0.06-0.08	0.0-2.9	0.0-0.5	.17	.17	ĺ		
644:				 	 								
Boash	85	0-9	30-40	1.10-1.40	0.06-0.20	0.13-0.17	6.0-8.9	3.0-6.0	.32	.32	5	4	86
	ĺ	9-29	35-60	1.10-1.40	0.06-0.20	0.15-0.20	6.0-8.9	1.0-3.0	.32	.32	İ	į	İ
		29-80	16-35	1.20-1.60	0.60-2.00	0.12-0.18	3.0-5.9	0.0-0.5	.32	.32	ĺ		
Percy	   7	   0-10	10-30	  1.30-1.60	0.60-2.00	0.18-0.22	3.0-5.9	4.0-9.0	.24	.28	   5	   5	56
_	ĺ	10-25	10-18	1.30-1.60	0.60-2.00	0.15-0.19	0.0-2.9	0.5-1.0	.24	.28	İ	į	İ
		25-80	7-18	1.60-1.80	0.60-2.00	0.12-0.19	0.0-2.9	0.0-0.5	.24	.28	į	į	İ
Woodslake	   5	   0-8	41-65	  1.45-1.65	0.06-0.60	0.10-0.14	6.0-8.9	3.0-5.0	.28	.28	   5	   4	86
	İ	8-15	60-85	1.35-1.45	0.0000-0.06	0.09-0.13	6.0-8.9	0.5-1.0	.28	.28	i	i	į
		15-36	60-85	1.35-1.45	0.02-0.06	0.09-0.13	6.0-8.9	0.0-0.5	.28	.28	İ	İ	Ì
		36-80	25-50	1.30-1.45	0.02-0.06	0.09-0.22	6.0-8.9	0.0-0.5	.43	.43			
Strandquist	   3	0-8	10-25	1.20-1.70	0.60-2.00	0.14-0.18	3.0-5.9	2.0-6.0	.28	.32	3	4L	86
		8-35	1-8	1.50-1.70	6.00-20	0.03-0.05	0.0-2.9	1.0-3.0	.10	.15	İ	İ	Ì
		35-80	15-30	1.30-1.65	0.60-2.00	0.12-0.19	3.0-5.9	0.0-0.5	.37	.37			
645:				 	 								
Espelie	85	0-10	8-18	1.30-1.45	2.00-6.00	0.13-0.18	0.0-2.9	2.0-4.0	.20	.20	5	3	86
		10-27	3-10	1.35-1.60	2.00-20	0.06-0.11	0.0-2.9	0.5-1.0	.17	.17	İ	İ	Ì
		27-80	35-60	1.35-1.60	0.06-0.20	0.09-0.19	6.0-8.9	0.0-0.5	.32	.32			
Grano	   5	   0-11	10-27	1.30-1.60	0.60-6.00	0.10-0.16	0.0-2.9	2.0-5.0	.24	.24	5	   5	56
	ĺ	11-41	35-60	1.20-1.50	0.06-0.20	0.15-0.18	6.0-8.9	1.0-3.0	.32	.32	İ	į	İ
		41-80	22-60	1.20-1.60	0.06-0.20	0.15-0.18	6.0-8.9	0.0-0.5	.32	.32			
Hilaire	   5	   0-13	8-18	  1.30-1.45	2.00-6.00	0.13-0.18	0.0-2.9	2.0-4.0	1.15	.20		   3	86
	İ	13-33		1.25-1.40	1	0.07-0.14	1	1.0-2.0	.15	.15	İ	i	İ
		33-80	35-60	1.35-1.55	0.06-0.20	0.09-0.19	6.0-9.0	0.0-0.5	.32	.32	į	İ	į
Wildwood	   5	   0-12		  0.10-0.25	0.20-6.00	0.35-0.45		25-99			   5	   2	134
		12-33		1.35-1.45	1	0.00-0.04	1	0.0-0.5	.28	.28	i	i	İ
	İ	33-80	50-75	1.40-1.55	0.0000-0.20	0.00-0.04	6.0-8.9	0.0-0.5	.28	.28	İ	i	İ
	 	33-80 	50-75 	1.40-1.55 	0.0000-0.20 	0.00-0.04	6.0-8.9 	0.0-0.5	.28 	.28 		 	

Table 24.--Physical Properties of the Soils--Continued

Table 24.--Physical Properties of the Soils--Continued

Map symbol and	Percent	   Depth	   Clay	Moist	Permea-	  Available		   Organic	Erosi	on fac	tors	erodi-	Wind  erodi-
component name	of map unit	 		bulk density	bility	water  capacity	extensi-	matter	   Kw	   Kf	   т	bility	
		In	Pct	g/cc	In/hr	In/in	Pct	Pct			-		
651:	 	 		 	 	 	 	 		 	 		 
Thiefriver	85	0-10	8-18	1.30-1.45	2.00-6.00	0.13-0.18	0.0-2.9	2.0-4.0	.24	.24	5	3	86
		10-16	8-18	1.25-1.40	2.00-20	0.09-0.17	0.0-2.9	0.0-1.0	.28	.28			
		16-35	2-10	1.25-1.40	6.00-20	0.06-0.11	0.0-2.9	0.0-0.5	.17	.17			
	 	35-80	35-70	1.35-1.60	0.06-0.20	0.09-0.19	6.0-8.9	0.0-0.5	.32	.32	 		
Grano	   5	0-11	10-27	  1.30-1.60	0.60-6.00	0.10-0.16	0.0-2.9	2.0-5.0	.24	.24	   5	   5	56
		11-41	35-60	1.20-1.50	0.06-0.20	0.15-0.18	6.0-8.9	1.0-3.0	.32	.32			
		41-80	22-60	1.20-1.60	0.06-0.20	0.15-0.18	6.0-8.9	0.0-0.5	.32	.32			
Huot	   5	   0-14	5-15	  1.50-1.60	2.00-6.00	  0.13-0.18	0.0-2.9	2.0-4.0	.20	.20	   5	3	86
		14-26	8-15	1.55-1.65	2.00-6.00	0.09-0.17	0.0-2.9	0.0-1.0	.20	.20	ĺ	İ	ĺ
		26-34	3-8	1.55-1.70	6.00-20	0.06-0.11	0.0-2.9	0.0-0.5	.20	.20			
	 	34-80	35-80	1.35-1.60	0.06-0.20	0.09-0.16	6.0-8.9	0.0-0.5	.32	.32			
Wildwood	   5	0-12		  0.10-0.25	0.20-6.00	0.35-0.45		25-99		 	   5	2	134
		12-33	35-75	1.35-1.45	0.06-0.20	0.00-0.04	6.0-8.9	0.0-0.5	.28	.28			
		33-80	50-75	1.40-1.55	0.0000-0.20	0.00-0.04	6.0-8.9	0.0-0.5	.28	.28			
708:	 			 	 								
Rushlake	85	0-8	3-10	1.50-1.70	6.00-20	0.10-0.12	0.0-2.9	0.5-4.0	.17	.17	5	2	134
	 	8-80	1-10	1.50-1.70	6.00-20	0.02-0.10	0.0-2.9	0.0-0.5	.05	.10	 		
Corliss	   6	0-8	2-10	  1.40-1.60	6.00-20	0.10-0.12	0.0-2.9	1.0-3.0	.15	.15	   5	2	134
		8-80	0-5	1.45-1.60	6.00-20	0.03-0.05	0.0-2.9	0.0-0.5	.10	.15			
Redby	   5	0-3	2-10	  1.40-1.60	6.00-20	0.08-0.12	0.0-2.9	0.5-2.0	.17	1 .17	   5	2	134
		3-28	1-8	1.55-1.70	6.00-20	0.07-0.10	0.0-2.9	0.0-0.5	.17	.17			
	 	28-80	0-6	1.55-1.70	6.00-20	0.06-0.08	0.0-2.9	0.0-0.5	.17	.17			
Hangaard	3	0-12	8-18	  1.25-1.45	2.00-6.00	0.10-0.14	0.0-2.9	3.0-8.0	.20	.20	   5	3	86
		12-80	2-10	1.50-1.70	6.00-40	0.02-0.04	0.0-2.9	0.0-0.5	.10	.15			
Pits, gravel	1									 	-		
712:	 	 		 	 	 	 	 		 	 		
Rosewood	85	0-11	8-18	1.20-1.40	2.00-6.00	0.13-0.18	0.0-2.9	4.0-7.0	.24	.24	3	3	86
	İ	11-19	1		2.00-6.00	1		1.0-3.0	.24	.24	İ	İ	İ
		19-65	1-6	1.45-1.65	6.00-20	0.05-0.08	0.0-2.9	0.0-0.5	.15	.15	ĺ	İ	İ
		65-80	1-6	1.40-1.65	6.00-20	0.02-0.07	0.0-2.9	0.0-0.5	.15	.15			
Deerwood	   6	   0-14	0-0	0.10-0.30	   0.60-6.00	0.35-0.45		   50-90		 	   5	2	134
		14-16	2-18	1.20-1.70	2.00-20	0.09-0.17	0.0-2.9	4.0-10	.17	.17			
		16-80	0-10	1.50-1.70	6.00-20	0.02-0.07	0.0-2.9	0.5-2.0	.17	.17			

Map symbol and	Percent	Depth	   Clay	   Moist	Permea-	  Available	   Linear	   Organic	Erosi	on fac	tors		Wind  erodi-
component name	of map unit	_	j I	bulk density	bility	water	extensi-   bility	matter	Kw	   Kf	   T	bility	
	-	In	Pct	g/cc	In/hr	In/in	Pct	Pct		İ	İ		
712:			 	 			 			l I	 	 	 
Hangaard	5	0-12	8-18	1.25-1.45	2.00-6.00	0.10-0.14	0.0-2.9	3.0-8.0	.20	.20	5	3	86
		12-80	2-10	1.50-1.70	6.00-40	0.02-0.04	0.0-2.9	0.0-0.5	.10	.15	ĺ		ĺ
Ulen	4	0-10	   8-20	1.30-1.50	2.00-6.00	0.13-0.18	0.0-2.9	2.0-5.0	.20	.20	3	3	   86
		10-16	5-12	1.45-1.65	6.00-20	0.06-0.10	0.0-2.9	0.0-1.0	.17	.17	İ	İ	İ
		16-67	1-7	1.50-1.70	6.00-20	0.06-0.08	0.0-2.9	0.0-0.5	.15	.15	İ	İ	İ
		67-80	10-18	1.20-1.50	0.60-2.00	0.15-0.19	0.0-2.9	0.0-0.5	.32	.32	Ì		
721B:			 				 			l I	 		 
Corliss	85	0-8	2-10	1.40-1.60	6.00-20	0.10-0.12	0.0-2.9	1.0-3.0	.15	.15	5	2	134
		8-80	0-5	1.45-1.60	6.00-20	0.03-0.05	0.0-2.9	0.0-0.5	.10	.15	Ì		
Rushlake	10	0-8	   3-10	  1.50-1.70	6.00-20	0.10-0.12	0.0-2.9	0.5-4.0	1 .17	1 .17	   5	   2	134
		8-80		1.50-1.70		0.02-0.10	1	0.0-0.5	.05	.10			
Hangaard	4	0-12	   8-18	  1.25-1.45	2.00-6.00	0.10-0.14	   0.0-2.9	3.0-8.0	.20		   5	3	   86
	-	12-80		1.50-1.70		0.02-0.04		0.0-0.5	.10	.15			
Pits, gravel	1		 				 	 			   -		 
733:			l I	 			 	 		l I	 	l I	 
Berner	90	0-23		0.15-0.35	0.20-6.00	0.35-0.48		80-95		i	2	2	134
		23-41	0-5	1.50-1.75	6.00-20	0.05-0.10	0.0-2.9	0.0-0.5	.05	.15	İ	İ	İ
		41-80	10-27	1.45-1.65	0.20-2.00	0.14-0.22	3.0-5.9	0.0-0.5	.32	.37	į	į	į
Grygla	5	0-6	   2-15	1.40-1.60	6.00-20	0.13-0.15	   0.0-2.9	1.0-4.0	1.15	1.15	   5	2	134
		6-26	1-10	1.50-1.70	6.00-20	0.06-0.11	0.0-2.9	0.5-1.0	.15	.15	İ	İ	İ
		26-80	8-27	1.30-1.75	0.20-2.00	0.17-0.19	3.0-5.9	0.0-0.5	.37	.37	ĺ		ĺ
Seelyeville	5	0-12	 	0.10-0.25	0.20-6.00	0.35-0.45	 	   25-99		 	   3	2	134
-		12-80		0.10-0.25	0.20-6.00	0.35-0.45		25-99			į	į	į
737:			 	 			 	 		 	 		 
Mahkonce	85	0-3	12-20	1.40-1.60	0.60-2.00	0.16-0.18	0.0-2.9	3.0-6.0	.28	.28	5	3	86
		3-5	16-26	1.30-1.55	0.20-0.60	0.16-0.22	3.0-5.9	1.0-3.0	.32	.32	i	İ	i
		5-16	35-60	1.25-1.40	0.06-0.20	0.13-0.19	6.0-8.9	0.0-0.5	.24	.24	İ	İ	į
		16-23	30-45	1.30-1.55	0.20-0.60	0.13-0.19	3.0-5.9	0.0-0.5	.32	.32	ĺ	Ì	İ
		23-80	25-35	1.30-1.55	0.20-0.60	0.13-0.19	3.0-5.9	0.0-0.5	.32	.32	Ì		
Auganaush	10	0-5	   12-27	1.35-1.55	0.60-2.00	0.20-0.24	0.0-2.9	3.0-8.0	.32	.32	   5	   6	   48
		5-7	5-18	1.40-1.60	0.60-2.00	0.16-0.24	0.0-2.9	1.0-3.0	.24	.24	İ	İ	İ
	İ	7-18	35-60	1.25-1.50	0.06-0.60	0.10-0.19	6.0-8.9	0.0-0.5	.28	.28			
	l i	18-58	30-45	1.30-1.55	0.06-0.60	0.14-0.19	3.0-5.9	0.0-0.5	.32	.32			[
	i i	58-80	100	1.25-1.50	0.20-2.00	0.16-0.19	3.0-5.9	0.0-0.5	.37	.37	1	I .	I

Table 24.--Physical Properties of the Soils--Continued

Table 24.--Physical Properties of the Soils--Continued

Map symbol and	Percent	Depth	   Clay	Moist	Permea-	  Available		Organic	Erosi	on fac	tors	erodi-	
component name	of			bulk	bility	water	extensi-	matter			! _	bility	
	map unit		<u> </u>	density		capacity	bility	<u> </u>	Kw	Kf	T	group	index
ļ		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
737:			 	 		 		 					
Eckvoll	5	0-6	5-15	1.30-1.70	6.00-20	0.10-0.12	0.0-2.9	1.0-3.0	.17	.17	5	2	134
		6-21	2-10	1.30-1.70	6.00-20	0.06-0.08	0.0-2.9	0.5-1.0	.15	.15			
I		21-26		1.40-1.70		0.16-0.18		0.0-0.5	.37	.37			
		26-80	16-32	1.30-1.70	0.20-2.00	0.17-0.19	3.0-5.9	0.0-0.5	.37	.37			
755 <b>:</b>			l I	 	 	 	 	 		 		 	
Woodslake	85	0-8	41-65	1.45-1.65	0.06-0.60	0.10-0.14	6.0-8.9	3.0-5.0	.28	.28	5	4	86
i		8-15	60-85	1.35-1.45	0.0000-0.06	0.09-0.13	6.0-8.9	0.5-1.0	.28	.28	i	i	i
į		15-36	60-85	1.35-1.45	0.02-0.06	0.09-0.13	6.0-8.9	0.0-0.5	.28	.28	İ	į	İ
j		36-80	25-50	1.30-1.45	0.02-0.06	0.09-0.22	6.0-8.9	0.0-0.5	.43	.43	İ	İ	İ
_ ,											_		
Boash	8	0-9		1.10-1.40	1	0.13-0.17	1	3.0-6.0	.32	.32	5	4	86
ļ		9-29 29-80		1.10-1.40		0.15-0.20 0.12-0.18		1.0-3.0	.32	.32			
· ·		29-80	10-35	1.20-1.60 	0.60-2.00	0.12-0.18 	3.0-5.9	0.0-0.5	.32	.32		 	
Wildwood	5	0-12		0.10-0.25	0.20-6.00	0.35-0.45		25-99	i	i	5	2	134
İ		12-33	35-75	1.35-1.45	0.06-0.20	0.00-0.04	6.0-8.9	0.0-0.5	.28	.28	ĺ	İ	Ì
		33-80	50-75	1.40-1.55	0.0000-0.20	0.00-0.04	6.0-8.9	0.0-0.5	.28	.28			
   Dora	2	0-5	 	  0 15-0 35	0.60-6.00	  0 35-0 55	 	   21-90		 	   2	   2	134
1	_	5-31	1	0.15-0.35			1	21-90	i	i	-	-	-0-
i		31-80			0.0000-0.06	1	1	0.0-0.5	.32	.32	i	İ	İ
					]		[	[				[	]
767:					!		!	!				!	
Auganaush	90	0-5				0.20-0.24		3.0-8.0	.32	.32	5	6	48
!		5-7		1.40-1.60		0.16-0.24		1.0-3.0	.24	.24			
ļ		7-18 18-58		1.25-1.50 1.30-1.55	1	0.10-0.19	1	0.0-0.5	.28	.28			1
ļ		58-80		1.25-1.50		0.14-0.19		0.0-0.5	37	37			l I
i		30-00	10-33	1.25-1.50 	0.20-2.00	0.10-0.19	3.0-3.9	0.0-0.5	.37	.37		 	l I
Mustinka	5	0 - 9	28-40	1.10-1.30	0.20-0.60	0.17-0.24	3.0-5.9	5.0-10	.28	.28	5	7	38
İ		9-35	35-60	1.20-1.40	0.06-0.20	0.13-0.19	6.0-8.9	1.0-3.0	.37	.37	ĺ	İ	Ì
		35-62	18-35	1.20-1.40	0.20-0.60	0.14-0.19	3.0-5.9	0.5-1.0	.37	.37			
		62-80	18-35	1.40-1.60	0.20-0.60	0.14-0.19	3.0-5.9	0.0-0.5	.37	.37	ļ		
Wildwood	3	0-12	 	  0.10-0.25	0.20-6.00	  0.35-0.45		   25-99		 	   5	   2	134
WIIdwood	3	12-33	1	1.35-1.45		0.00-0.04	1	0.0-0.5	.28	.28	]	4	131
		33-80			0.000-0.20	1	1	0.0-0.5	.28	.28			
j		İ	İ	İ	İ	İ	İ	İ	İ	İ	İ	İ	İ
Mahkonce	2	0-3				0.16-0.18		3.0-6.0	.28	.28	5	3	86
		3-5		1.30-1.55		0.16-0.22		1.0-3.0	.32	.32		!	
!		5-16		1.25-1.40	1	0.13-0.19		0.0-0.5	.24	.24			ļ
		16-23		1.30-1.55		0.13-0.19		0.0-0.5	.32	.32			
		23-80	25-35	1.30-1.55	0.20-0.60	0.13-0.19	3.0-5.9	0.0-0.5	.32	.32	!		1

Map symbol and	Percent	Depth	Clay	   Moist	Permea-	  Available		   Organic	Erosi	on fac	tors	erodi-	Wind  erodi
component name	of			bulk	bility	water	extensi-	matter				bility	
	map unit			density		capacity	bility		Kw	Kf	T	group	index
		In	Pct	g/cc	In/hr	In/in	Pct	Pct		 			
794:				 									
Clearriver	85	0-2	5-15	1.40-1.60	6.00-20	0.10-0.12	0.0-2.9	1.0-2.0	.17	.17	5	2	134
		2-21	3-10	1.55-1.70	6.00-20	0.06-0.11	0.0-2.9	0.0-0.5	.15	.15			
	ļ	21-80	1-5	1.55-1.70	6.00-20	0.02-0.06	0.0-2.9	0.0-0.5	.10	.15			
Hiwood	7	0-3	1-5	1.40-1.60	6.00-20	0.08-0.12	0.0-2.9	0.5-2.0	.15	.15	5	1	250
		3-22	1-10	1.55-1.70	6.00-20	0.07-0.10	0.0-2.9	0.0-0.5	.15	.15			
		22-80	1-10	1.55-1.70	6.00-20	0.05-0.08	0.0-2.9	0.0-0.5	.15	.15			
Meehan	5	0-8	4-10	  1.35-1.65	2.00-6.00	0.10-0.12	0.0-2.9	0.5-3.0	.17	   .17	   5	2	134
i	j	8-31	4-9	1.60-1.70	6.00-20	0.06-0.11	0.0-2.9	0.0-0.5	.15	.15	İ	İ	İ
	į	31-80	1-4	1.60-1.70	6.00-20	0.02-0.07	0.0-2.9	0.0-0.5	.15	.15	į	į	į
Faunce	3	0-2	3-10	  1.40-1.60	6.00-20	0.10-0.13	   0.0-2.9	1.0-2.0		   .17	   5	   2	134
i	i	2-14	3-10	1.45-1.70	6.00-20	0.06-0.08	0.0-2.9	0.0-0.5	.10	.10	İ	i	i
i	j	14-24	3-10	1.45-1.70	6.00-20	0.06-0.08	0.0-2.9	0.0-0.5	.10	.15	İ	İ	İ
	į	24-80	0-5	1.45-1.75	6.00-20	0.03-0.06	0.0-2.9	0.0-0.5	.10	.15	į	į	į
1002:							    -						
	90	0-12	1 10	1.30-1.80	2.00-20	0.07-0.13	   0.0-2.9	3.0-10	.20	.20	   5	   3	86
frequently flooded	90	12-80	1	1.40-1.65	0.60-20	0.04-0.20		0.5-3.0	1.20	.20	3	3	
g 1		0.10			0 00 6 00								
Seelyeville	6	0-18 18-80	1	0.10-0.25		0.35-0.45		25-99			3	8	0
		18-80		0.10-0.25	0.20-6.00	0.35-0.45	 	25-99		 	 	 	
Hapludalfs	2	0 - 6	1	1.30-1.45		0.16-0.18		0.5-2.0	.20	.20	5	3	86
		6-8	1	1.30-1.55		0.10-0.18		0.0-0.5	.20	.20	ļ	!	!
		8-25	1	1.25-1.65	0.20-2.00	0.15-0.19		0.0-0.5	.37	.37			
		25-80	10-27	1.30-1.60	0.60-6.00	0.14-0.19	0.0-2.9 	0.0-0.5	.32	.32 	 	 	
Water	2			i i							ļ -		
1030:				 			 						
Pits, gravel	75										-		
Udipsamments	20	0-14	1-15	  1.50-1.70	2.00-20	0.05-0.10	0.0-2.9	0.0-0.5	.15	.15	   5	2	220
	ĺ	14-60	1-10	1.50-1.70	6.00-20	0.05-0.08	0.0-2.9	0.0-0.0	.10	.10	ĺ	İ	İ
	į	60-80	1-10	1.50-1.70	20-60	0.03-0.05	0.0-2.9	0.0-0.0	.05	.10			
Corliss	2	0-8	2-10	  1.40-1.60	6.00-20	0.10-0.12	   0.0-2.9	1.0-3.0	1.15	   .15	   5	2	134
i	i	8-80		1.45-1.60	6.00-20	0.03-0.05	0 0-2 0	0.0-0.5	.10	.15	i	i	i

Table 24.--Physical Properties of the Soils--Continued

Table 24.--Physical Properties of the Soils--Continued

Map symbol and	Percent of	   Depth	   Clay	   Moist   bulk	Permea-	  Available   water	   Linear  extensi-	Organic	Erosi	on fac		erodi-	Wind  erodi-
component name		 	 		bility			matter	Kw	   Kf		bility	bility  index
	map unit	l =	   D = t	density	T /1	capacity	bility	l	I KW	KI	T	group	Index
		In	Pct	g/cc	In/hr	In/in	Pct	Pct			 		
1030:		 	 	 		 	 			 	l I	 	l l
Karlstad	2	0-7	1-10	1.40-1.60	6.00-20	0.10-0.12	0.0-2.9	1.0-4.0	.17	.17	3	2	134
		7-10		1.35-1.60		0.13-0.18		0.5-2.0	.24	.24	-	i -	
i		10-14	5-18	1.50-1.70	2.00-6.00	0.12-0.16	0.0-2.9	0.0-0.5	.10	.17	i	İ	İ
		14-80	1-5	1.50-1.70	6.00-20	0.02-0.04	0.0-2.9	0.0-0.5	.10	.17	į	į	İ
Hangaard	1	0-12				0.10-0.14		3.0-8.0	.20	.20	5	3	86
		12-80	2-10	1.50-1.70	6.00-40	0.02-0.04	0.0-2.9	0.0-0.5	.10	.15			
									!	!	ļ		ļ
1031:													
Seelyeville, ponded	90	0-18	1	0.10-0.25		0.35-0.45		25-99			3	8	0
		18-80		0.10-0.25	0.20-6.00	0.35-0.45		25-99			 		
Cathro	4	   0-8	 	  0 15-0 35	0.20-6.00	  0.45-0.55	l I	   60-85			   2	2	134
Cacinio		8-40	1	0.15-0.30		0.35-0.45	l	60-85			4	4	131
		40-80		1.50-1.70		0.11-0.19	1	1.0-5.0	.20	.24	 	 	İ
i		10 00	20 00		0120 2100			200 300			i		i
Dora	3	0-5		0.15-0.35	0.60-6.00	0.35-0.55		21-90	i		2	2	134
		5-31	i	0.15-0.35	0.60-6.00	0.35-0.55	i	21-90	j		i	İ	İ
		31-80	35-70	1.40-1.65	0.0000-0.06	0.10-0.20	6.0-8.9	0.0-0.5	.32	.32	İ	į	İ
j			ĺ	į į		ĺ	ĺ	ĺ	İ	ĺ	ĺ	İ	
Markey	3	0-42		0.15-0.35		0.35-0.45		55-85			2	2	134
		42-80	0-10	1.40-1.65	6.00-20	0.03-0.08	0.0-2.9	0.0-0.5	.15	.15			
									ļ		ļ		
1067:													
Fluvaquents,	60	   0-11		  1.30-1.80	0 00 00	  0.07-0.13					   5	   3	
frequently flooded	60	0-11   11-80		1.30-1.80   1.40-1.65		0.07-0.13		3.0-10	.20	.20	5	3	86
		TT-80	1-27	1.40-1.65	0.60-20	0.04-0.20	0.0-2.9	0.5-3.0	.1/	.20	 	 	l I
Hapludalfs	30	   0-6	   10-18	  1 30-1 45	2.00-6.00	  0.16-0.18	0.0-2.9	0.5-2.0	.20	.20	   5	3	86
napiadalis		6-8		1.30-1.55		0.10-0.18		0.0-0.5	.20	.20	]	3	00
		8-25	!	1.25-1.65		0.15-0.19		0.0-0.5	.37	.37	i		i
i		25-80	10-27	1.30-1.60	0.60-6.00	0.14-0.19	0.0-2.9	0.0-0.5	.32	.32	i	İ	İ
		İ	İ	j		İ	İ	İ	İ	į	İ	İ	İ
Seelyeville	5	0-18		0.10-0.25	0.20-6.00	0.35-0.45		25-99			3	8	0
		18-80		0.10-0.25	0.20-6.00	0.35-0.45		25-99					
Water	5										-		
11225									1				
1133B: Skime	0.5	   0-6		1 25 1 50	6 00 20	  0.08-0.12		0.5-2.0			   5	   2	134
SKIME	85	0-6   6-17		1.35-1.50		0.08-0.12		0.5-2.0	1.17	.17   .15	5	4	1 134
		6-17   17-22				0.08-0.11		0.0-1.0	.15	.15	I I	 	I I
		22-72		1.50-1.70		0.12-0.17		0.0-0.5	1.15	1.15	I I	1	
		72-80		1.50-1.70		0.05-0.22		0.0-0.5	1.15	1.15		 	
		, , 2 00		1	2.00 20	10.00 0.22	1 0.0 2.0	, 5.0 0.5			1	1	1

		   B +1	67	36-1-4					Erosi	on fac	tors		Wind
Map symbol and component name	Percent of	Depth	Clay	Moist   bulk	Permea- bility	Available water	Linear extensi-	Organic matter	ļ	T		erod1-	erodi-
component name	map unit			density	DITTLY	capacity	bility	Matter	Kw	Kf	   Tr	group	
		In	Pct	g/cc	In/hr	In/in	Pct	Pct		102	-		
	į	į	į		į	į	į	į	į	į	į	į	ļ
1133B: Hiwood	   10	   0-3	1 1 - 5	  1.40-1.60	6.00-20	  0.08-0.12	0 0-2 9	0.5-2.0	1.15	1.15	   5	   1	250
III WOOQ	1 10	3-22	1	1.55-1.70		0.03-0.12		0.0-0.5	1.15	1.15	]	-	230
		22-80	1	1.55-1.70		0.05-0.08		0.0-0.5	.15	.15		İ	
Zippel	   5	0-10	10-18	  1.35-1.50	2.00-6.00	  0.16-0.22	0 0-2 9	2.0-6.0	.28	.28	   5	   3	86
219901	i	10-16		1.40-1.55		0.15-0.20		0.0-1.0	.37	.37	]	]	00
		16-80		1.40-1.55		0.15-0.20		0.0-0.5	.37	.37		İ	
1134:				l i									
Borup	   55	0-9	15-27	1.20-1.40	2.00-6.00	0.20-0.23	0.0-2.9	4.0-8.0	.28	.28	   5	4L	86
2014P	33	9-34	1	1.30-1.50	1	0.17-0.20		1.0-3.0	.32	.32			
	į	34-80		1.35-1.65		0.15-0.19		0.0-0.5	.24	.24	į	į	į
Glyndon	   35	   0-7	15-20	  1.20-1.40	0.60-2.00	  0.20-0.23	0.0-2.9	3.0-7.0	.28	.28	   5	   3	   86
	į	7-80	10-18	1.30-1.50	0.60-6.00	0.17-0.20	0.0-2.9	1.0-2.0	.43	.43			
Augsburg, depressional	   5	   0-9	10-27	  1.20-1.40	0.60-2.00	  0.20-0.23	0.0-2.9	5.0-8.0	.28	.28	   5	   4L	   86
gg,p	i	9-16	1	1.30-1.50		0.20-0.23		1.0-3.0	.28	.28	-	i	
	İ	16-32	5-18	1.40-1.60	2.00-6.00	0.17-0.22	0.0-2.9	0.5-1.0	.28	.28	ĺ	i	i
	į	32-80	35-85	1.10-1.40	0.0000-0.20	0.10-0.14	6.0-8.9	0.0-0.5	.28	.28	į	į	į
Skime	   5	   0-6	5-10	  1.35-1.50	   6.00-20	  0.08-0.12	0.0-2.9	0.5-2.0	1.17	1.17	   5	   2	134
	İ	6-17	2-10	1.35-1.50	6.00-20	0.08-0.11	0.0-2.9	0.0-1.0	.15	.15	İ	İ	İ
	ĺ	17-22	10-18	1.25-1.40	2.00-6.00	0.12-0.17	0.0-2.9	0.0-0.5	.24	.24	ĺ	İ	ĺ
		22-72	2-5	1.50-1.70	6.00-20	0.05-0.08	0.0-2.9	0.0-0.5	.15	.15			
		72-80	2-18	1.50-1.70	0.60-20	0.05-0.22	0.0-2.9	0.0-0.5	.15	.15			
1144:					İ								
Strathcona,													
depressional	45	0-12	1	1.20-1.40		0.20-0.30		10-20	.20	.20	3	3	86
		12-18	1	1.30-1.50		0.14-0.16		0.5-2.0	.24	.24	ļ	!	!
		18-39		1.35-1.60	1	0.05-0.09		0.0-0.5	.10	.10			
	 	39-80	15-30	1.40-1.60	0.20-2.00	0.14-0.18	3.0-5.9	0.0-0.5	.32	.32	 		 
Kratka, depressional	45	0-9	5-15	1.20-1.50	2.00-20	0.14-0.18	0.0-2.9	5.0-25	.20	.20	5	2	134
		9-26	1	1.30-1.60		0.06-0.11		0.5-1.0	.17	.17			
	 	26-80	10-35	1.50-1.80	0.20-2.00	0.11-0.19	3.0-5.9	0.0-0.5	.32	.32			
Kratka	5	0-8	1	1.20-1.50		0.13-0.18		2.0-5.0	.20	.20	3	3	86
		8-22	1	1.30-1.60	1	0.06-0.11	1	0.5-1.0	.17	.17			
	 	22-80	10-30	1.50-1.80	0.20-2.00	0.11-0.19	3.0-5.9	0.0-0.5	.37	.37	 		
Northwood	5	0-11	1	0.18-0.25		0.35-0.45		50-85			5	2	134
	ļ	11-16	1	1.45-1.65		0.09-0.17		1.0-3.0	.15	.15	ļ	!	ļ
		16-25	1	1.55-1.70		0.06-0.11		0.0-0.5	.15	.15		!	!
	 	25-80	7-30	1.40-1.75	0.60-2.00	0.14-0.19	3.0-5.9	0.0-0.5	.37	.37	 		 
	1	1	1	1	t .	1	1	1	1	1	1	1	1

Table 24.--Physical Properties of the Soils--Continued

Table 24.--Physical Properties of the Soils--Continued

Map symbol and	   Percent	   Depth	   Clay	   Moist	   Permea-	  Available	   Linear	   Organic	Erosi	on fact	tors	Wind  erodi-	Wind  erodi-
component name	of			bulk	bility	water	extensi-	matter				bility	bility
	map unit			density		capacity	bility		Kw	Kf	Т	group	index
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					I
1154:													
Sax	90	0-15	0-1	0.15-0.25	0.20-6.00	0.35-0.45		25-70			5	2	134
		15-24		1.30-1.50		0.17-0.22		1.0-15	.28	.28			
		24-39		1.30-1.50		0.17-0.22		0.5-1.0	.43	.43			
		39-71		1.30-1.55		0.14-0.22		0.0-0.5	.43	.43			
		71-80	27-60	1.30-1.60	0.06-0.60	0.09-0.19	6.0-8.9	0.0-0.5	.43	.43			
				!			ļ	!			!		!
Wabanica	5	0-8				0.17-0.22		2.0-4.0	.28	.28	5	4L	86
		8-19		1.35-1.60		0.17-0.22		0.5-1.0	.28	.28	!		!
		19-80	18-35	1.45-1.65	0.60-2.00	0.17-0.22	0.0-2.9	0.0-0.5	.28	.28			
Cathro	3	0-8			1	0.45-0.55		60-85			2	2	134
		8-40		0.15-0.30		0.35-0.45	1	60-85					
		40-80	10-30	1.50-1.70	0.20-2.00	0.11-0.19	0.0-2.9	1.0-5.0	.20	.24			
Woodslake	   2	   0-8	41 65		   0.06-0.60	  0.10-0.14	6.0-8.9	3.0-5.0	.28	1 .28	   5	   4	   86
woodstake	<b>4</b>	0-8   8-15		1	0.00-0.60	1		0.5-1.0	.28	.28	<b>ɔ</b>	4	86
	 	8-15   15-36		1.35-1.45		0.09-0.13		0.0-0.5	.28	.28	 	1	 
	 	36-80		1.30-1.45		0.09-0.13		0.0-0.5	.43	.43	 	1	 
	l I	36-80	25-50	1.30-1.45	0.02-0.06	0.09-0.22	6.0-8.9	0.0-0.5	1 .43	.43	l I		 
1158:	l I	 	 	l I	l I	 			1	 	l I	1	I I
Skagen	l 85	   0-9	   10_18	1.25-1.40	0.60-2.00	  0.16-0.18	0.0-2.9	4.0-9.0	.20	.24	   5	41.	l 86
bhagan	03 	9-19		1.30-1.50		0.11-0.18		0.5-2.0	.24	.28	5		00
	 	19-80		1.30-1.50		0.11-0.18		0.0-0.5	.24	.28	 	İ	i i
	 	15 00	10 10	1	0.00 0.00		0.0 2.5	0.0 0.5		.20	 		İ
Percv	10	0-10	10-30	11.30-1.60	0.60-2.00	0.18-0.22	3.0-5.9	4.0-9.0	.24	.28	5	5	56
10107	=v	10-25		1.30-1.60		0.15-0.19		0.5-1.0	.24	.28			
	İ	25-80		1.60-1.80	1	0.12-0.19		0.0-0.5	.24	.28	i	i	i
											i		i
Foxhome	,   5	0-10	10-20	1.35-1.50	2.00-6.00	0.13-0.18	0.0-2.9	3.0-7.0	.20	.20	3	3	86
		10-15		1.45-1.60	1	0.07-0.12		0.5-1.0	.20	.20		i	i
	İ	15-23	1-5	1.50-1.70	6.00-20	0.02-0.07	0.0-2.9	0.5-1.0	.05	.15	İ	i	İ
	İ	23-80		1.40-1.70		0.15-0.22	0.0-2.9	0.0-0.5	.32	.37	İ	i	İ
	İ	İ	į	İ	İ	İ	i	İ	i	İ	İ	į	į
1170:	ĺ		İ	İ	İ		İ	İ	İ	į	ĺ	İ	İ
Skagen, very cobbly	85	0-10	10-18	1.25-1.40	0.60-2.00	0.16-0.18	0.0-2.9	4.0-9.0	.20	.24	5	4L	86
		10-28	10-18	1.30-1.50	0.60-6.00	0.11-0.18	0.0-2.9	0.5-2.0	.24	.28			
		28-80	10-18	1.30-1.50	0.60-6.00	0.11-0.18	0.0-2.9	0.0-0.5	.24	.28			
							[						
Percy, very cobbly	10	0-8	10-30	1.30-1.60	0.60-2.00	0.18-0.22	3.0-5.9	4.0-9.0	.24	.28	5	5	56
		8-23	10-18	1.30-1.60	0.60-2.00	0.15-0.19	0.0-2.9	0.5-1.0	.24	.28			
		23-80	7-18	1.60-1.80	0.60-2.00	0.12-0.19	0.0-2.9	0.0-0.5	.24	.28			

Map symbol and	Percent	   Depth	Clay	   Moist	Permea-	Available		Organic	Erosi	on fact		erodi-	Wind  erodi-
component name	of			bulk	bility	water	extensi-	matter	_	 		bility	
	map unit		<u> </u>	density		capacity	bility	<u> </u>	Kw	Kf	T	group	index
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
1170:		 	 	 				 				 	l I
Foxhome	5	0-10	10-20	1.35-1.50	2.00-6.00	0.13-0.18	0.0-2.9	3.0-7.0	.20	.20	3	3	86
		10-15	2-10	1.45-1.60	6.00-20	0.07-0.12	0.0-2.9	0.5-1.0	.20	.20		į	İ
		15-23	1-5	1.50-1.70	6.00-20	0.02-0.07	0.0-2.9	0.5-1.0	.05	.15			
		23-80	12-35	1.40-1.70	0.60-2.00	0.15-0.22	0.0-2.9	0.0-0.5	.32	.37			ļ
1179B:							 						
Moranville	85	   0-8	2-10	  1.45-1.60	6.00-20	0.08-0.11	0.0-2.9	0.5-2.0	1 .17	1 .17	   5	1 2	134
		8-24	1	1.45-1.60		0.05-0.11		0.0-0.5	.15	.15		-	
i		24-42	27-35	1.15-1.30	0.20-0.60	0.14-0.20		0.0-0.5	.43	.43		i	İ
İ		42-80	15-35	1.15-1.30	0.20-2.00	0.13-0.20	3.0-5.9	0.0-0.5	.43	.43	İ	į	į
_	_												
Baudette	5	0-8			2.00-6.00	0.15-0.19		1.0-4.0	.28	.28	5	3	86
		8-10	1		0.60-2.00	0.14-0.20		0.5-1.0	.37	.37			
		10-30	1	1.25-1.45	0.60-2.00	0.17-0.24		0.5-1.0	37	.37   .37			
		30-80 	5-27	1.30-1.60  	0.60-2.00	0.17-0.22	0.0-2.9 	0.0-0.5	.3/	.3/		 	l l
Hiwood	5	0-3	1-5	1.40-1.60	6.00-20	0.08-0.12	0.0-2.9	0.5-2.0	.15	.15	5	1	250
		3-22	1-10	1.55-1.70	6.00-20	0.07-0.10	0.0-2.9	0.0-0.5	.15	.15		İ	ĺ
		22-80	1-10	1.55-1.70	6.00-20	0.05-0.08	0.0-2.9	0.0-0.5	.15	.15			ļ
Spooner	5	   0-6	   5_18	  1 30_1 45	2.00-6.00	0.20-0.22	   n n_2 9	2.0-4.0		   .37	   5	   3	   86
Specific		6-15		1.35-1.55		0.17-0.19		0.5-1.0	.37	.37	]	3	
j		15-22		1.30-1.50		0.17-0.22		0.0-0.5	.37	.37			i
		22-60		1.40-1.60		0.17-0.22		0.0-0.5	.37	.37		İ	İ
									-				
1181: Rosewood	50	   0-8	   8_18	  1 20_1 40	2.00-6.00	0.13-0.18	   n n_2 q	4.0-7.0	.24	.24	   3	   3	   86
Kobewood	30	8-15	1		2.00-6.00	0.11-0.15		1.0-3.0	.24	.24	]	3	00
		15-80		1.45-1.65		0.05-0.08		0.0-0.5	.15	.15			
İ			ĺ	İ		İ		ĺ	İ			ĺ	İ
Ulen	40	0-10			2.00-6.00	0.13-0.18		2.0-5.0	.20	.20	3	3	86
		10-18	1	1.45-1.65		0.06-0.10		0.0-1.0	.17	.17			
		18-80	1-7	1.50-1.70	6.00-20	0.06-0.08	0.0-2.9	0.0-0.5	.15	.15			
Redby	5	   0-3	2-10	  1.40-1.60	6.00-20	0.08-0.12	0.0-2.9	0.5-2.0	1 .17	1 .17	   5	2	134
_		3-28	1-8	1.55-1.70	6.00-20	0.07-0.10	0.0-2.9	0.0-0.5	.17	.17		i	İ
		28-80	0-6	1.55-1.70	6.00-20	0.06-0.08	0.0-2.9	0.0-0.5	.17	.17	ĺ	İ	į
Deerwood	3	   0-14			0.60-6.00	0.25.0.45	 	 		 	   5	   2	134
Deerwood	3	0-14	1	0.10-0.30   1.20-1.70		0.35-0.45		50-90 4.0-10	1.17		<b>ɔ</b>	4	134
		16-80	1	1.50-1.70		0.03-0.17		0.5-2.0	1.17	1.17		 	l I
					<del></del>							į	į
Syrene	2	0-11	8-18	1.25-1.45	2.00-6.00	0.13-0.18	0.0-2.9	3.0-8.0	.20	.20	3	3	86
		11-19			2.00-6.00	0.15-0.19		0.0-2.0	.37	.37			
		19-80	2-10	1.50-1.70	6 00 20	0.02-0.04	0 0-2 9	0.0-0.5	.10	.10		1	1

Table 24.--Physical Properties of the Soils--Continued

Table 24.--Physical Properties of the Soils--Continued

	Percent	Depth	Clay	Moist	Permea-	Available		Organic	ļ			1	erodi
component name	of map unit		 	bulk density	bility 	water capacity	extensi- bility	matter	   Kw	   Kf	   T	bility	
		In	Pct	g/cc	In/hr	In/in	Pct	Pct	<u> </u>	<u> </u>			
1182:			 	 	 		 	 		 	 	 	
Warroad	85	0-11	5-15	1.25-1.35	2.00-6.00	0.13-0.18	0.0-2.9	2.0-5.0	.24	.24	3	3	86
İ	j	11-26	2-10	1.45-1.60	6.00-20	0.05-0.11	0.0-2.9	0.5-1.0	.17	.17	İ	İ	İ
	į	26-80	18-35	1.15-1.30	0.20-2.00	0.19-0.21	3.0-5.9	0.0-0.5	.43	.43			
   Wabanica	7	0 - 8	   15-27	  1.35-1.55	   0.60-2.00	  0.17-0.22	0.0-2.9	2.0-4.0	.28	.28	   5	   4L	   86
ĺ	ĺ	8-19	18-35	1.35-1.60	0.60-2.00	0.17-0.22	0.0-2.9	0.5-1.0	.28	.28		İ	ĺ
		19-80	18-35	1.45-1.65	0.60-2.00	0.17-0.22	0.0-2.9	0.0-0.5	.28	.28			
Enstrom	5	0-6	4-15	  1.30-1.50	   6.00-20	  0.10-0.12	0.0-2.9	0.5-4.0	.17	   .17	   5	2	134
j	j	6-29	1-12	1.40-1.65	6.00-20	0.06-0.08	0.0-2.9	0.0-0.5	.15	.15	ĺ	İ	ĺ
	į	29-80	10-35	1.50-1.65	0.20-2.00	0.17-0.20	3.0-5.9	0.0-0.5	.37	.37			
  Sax	3	0-15	   0-1	  0.15-0.25	   0.20-6.00	  0.35-0.45	 	   25-70		 	   5	2	134
j	j	15-24	18-35	1.30-1.50	0.60-2.00	0.17-0.22	0.0-2.9	1.0-15	.28	.28	ĺ	İ	ĺ
ĺ	ĺ	24-39	18-35	1.30-1.50	0.60-2.00	0.17-0.22	0.0-2.9	0.5-1.0	.43	.43		İ	ĺ
		39-71	10-35	1.30-1.55	0.60-2.00	0.14-0.22	0.0-2.9	0.0-0.5	.43	.43			
		71-80	27-60	1.30-1.60	0.06-0.60	0.09-0.19	6.0-8.9	0.0-0.5	.43	.43			
1187:				 	 	 	 	 			 		
Dora, ponded	90	0-24		0.15-0.45	0.60-6.00	0.35-0.55		25-99			2	8	0
I		24-30	22-40	1.10-1.25	0.60-2.00	0.22-0.25	3.0-5.9	10-20	.28	.28			
		30-80	35-60	1.40-1.65	0.0000-0.06	0.00-0.04	6.0-8.9	0.0-0.5	.28	.28			
Seelyeville, ponded	4	0-18	 	  0.10-0.25	0.20-6.00	  0.35-0.45	 	   25-99		 	   3	8	0
		18-80		0.10-0.25	0.20-6.00	0.35-0.45		25-99					
  Wildwood	4	0-12	 	0.10-0.25	0.20-6.00	  0.35-0.45	 	25-99		 	   5	2	134
ĺ	ĺ	12-33	35-75	1.35-1.45	0.06-0.20	0.00-0.04	6.0-8.9	0.0-0.5	.28	.28		İ	ĺ
		33-80	50-75	1.40-1.55	0.0000-0.20	0.00-0.04	6.0-8.9	0.0-0.5	.28	.28			
Boash	2	0-9	30-40	  1.10-1.40	   0.06-0.20	  0.13-0.17	6.0-8.9	3.0-6.0	.32	.32	   5	4	86
j	j	9-29	35-60	1.10-1.40	0.06-0.20	0.15-0.20	6.0-8.9	1.0-3.0	.32	.32	ĺ	İ	İ
	į	29-80	16-35	1.20-1.60	0.60-2.00	0.12-0.18	3.0-5.9	0.0-0.5	.32	.32		İ	
 1191:			 	 	 		 	 			 		
Sahkahtay	85	0-4	5-15	1.35-1.50	2.00-6.00	0.10-0.14	0.0-2.9	2.0-4.0	.20	.20	5	3	86
į	į	4-8	2-10	1.45-1.55	6.00-20	0.05-0.08	0.0-2.9	0.5-1.0	.15	.15			
İ	ĺ	8-14	18-30	1.40-1.55	0.60-2.00	0.13-0.17	3.0-5.9	0.5-1.0	.28	.28			
	ļ	14-80	1-8	1.50-1.70	20-40	0.03-0.06	0.0-2.9	0.0-0.5	.10	.15			
   Cormant	5	0 - 6	3-10	  1.30-1.50	   6.00-20	  0.08-0.12	0.0-2.9	   2.0-10	.17	   .17	   5	2	134
	i	6-80	1 0 E	1.50-1.70	6 00-20	0.06-0.10	0.0-2.9	0.5-1.0	.17	.17		I	I

Map symbol and	Percent	Depth	   Clay	Moist	Permea-	  Available		   Organic	Erosi	on fac	tors	erodi-	Wind  erodi-
component name	of			bulk	bility	water	extensi-	matter				bility	
	map unit		<u> </u>	density	- /2	capacity	bility	<u> </u>	Kw	Kf	T	group	index
		In	Pct	g/cc	In/hr	In/in	Pct	Pct	l	l I	l I	 	l I
1191:					! 						i		
Deerwood	5	0-14	0-0	0.10-0.30	0.60-6.00	0.35-0.45	i	50-90	j	j	5	2	134
I		14-16		1.20-1.70		0.09-0.17	1	4.0-10	.17	.17			
		16-80	0-10	1.50-1.70	6.00-20	0.02-0.07	0.0-2.9	0.5-2.0	.17	.17			
  Karlstad	3	   0-7	   1-10	1.40-1.60	   6.00-20	  0.10-0.12	0.0-2.9	1.0-4.0	1 .17	1.17	   3	   2	134
		7-10	5-18	1.35-1.60	2.00-6.00	0.13-0.18	0.0-2.9	0.5-2.0	.24	.24	i	i	İ
i		10-14	5-18	1.50-1.70	2.00-6.00	0.12-0.16	0.0-2.9	0.0-0.5	.10	.17	İ	i	į
İ		14-80	1-5	1.50-1.70	6.00-20	0.02-0.04	0.0-2.9	0.0-0.5	.10	.17	ĺ	İ	İ
D - 31	2	   0-3		  1.40-1.60		  0.08-0.12		0.5-2.0		1 1 7	   5	   2	134
Redby	2	0-3   3-28		1.55-1.70		0.08-0.12	1	0.5-2.0	1.17	.17	5	2	134
		3-28 28-80	1	1.55-1.70		0.07-0.10		0.0-0.5	1.17	1.17	 		l I
		20 00			0.00 20					•=/	i		
1206:		İ	į	j	İ	İ	İ	İ	j	j	į	į	į
Cormant	55	0-7	3-10	1.30-1.50	6.00-20	0.08-0.12	0.0-2.9	2.0-10	.17	.17	5	2	134
		7-80	0-5	1.50-1.70	6.00-20	0.06-0.10	0.0-2.9	0.5-1.0	.17	.17			
Redby	35	   0-4	2-10	1.40-1.60	   6.00-20	  0.08-0.12	0.0-2.9	0.5-2.0	1 .17	1.17	   5	   2	134
		4-30	1-8	1.55-1.70	6.00-20	0.07-0.10	0.0-2.9	0.0-0.5	.17	.17	i	i	İ
		30-80	0-6	1.55-1.70	6.00-20	0.06-0.08	0.0-2.9	0.0-0.5	.17	.17	į	į	į
Hiwood	5	   0-3	1_5	  1.40-1.60	   6 00-20	  0.08-0.12	0 0-2 9	0.5-2.0		   .15	   5	   1	250
III WOOQ	3	3-22		1.55-1.70		0.07-0.10		0.0-0.5	1.15	1.15	]	-	250
		22-80		1.55-1.70		0.05-0.08	1	0.0-0.5	.15	.15	i	<u> </u>	
i		İ	į	j	İ	İ	İ	İ	j	j	į	į	į
Leafriver	5	0-13	1	0.10-0.25		0.35-0.50	1	50-90			5	2	134
		13-80	0-10	1.50-1.65	6.00-20	0.03-0.08	0.0-2.9	0.5-5.0	.17	.17	ļ		
1214:		 	 	 	 	 	 		l	l I	l I	 	l I
Mustinka	90	0-9	28-40	1.10-1.30	0.20-0.60	0.17-0.24	3.0-5.9	5.0-10	.28	.28	5	7	38
		9-35		1.20-1.40		0.13-0.19		1.0-3.0	.37	.37	ĺ	i	İ
		35-62	18-35	1.20-1.40	0.20-0.60	0.14-0.19	3.0-5.9	0.5-1.0	.37	.37	ĺ	į	į
		62-80	18-35	1.40-1.60	0.20-0.60	0.14-0.19	3.0-5.9	0.0-0.5	.37	.37			
Espelie	4	   0-10	   8-18	  1 30-1 45	2.00-6.00	  0.13-0.18	   0 0-2 9	2.0-4.0	.20	.20	   5	   3	86
IDPCITE	-	10-27		1.35-1.60		0.06-0.11		0.5-1.0	.17	.17		]	
		27-80		1.35-1.60		0.09-0.19		0.0-0.5	.32	.32	İ	i	
			!										
Wildwood	4	0-12		0.10-0.25		0.35-0.45	1	25-99			5	2	134
	 	12-33		1.35-1.45	0.06-0.20	0.00-0.04		0.0-0.5	.28	.28	1		1
		33-60	50-75	11.40-1.55			0.0-0.9	0.0-0.5	.20	.20			
Dalbo	2	0-15	20-27	1.25-1.45	0.60-2.00	0.22-0.24	0.0-2.9	2.0-4.0	.37	.37	5	6	48
I		15-23		1.25-1.45		0.10-0.18		0.5-2.0	.32	.32			
I		23-80	35-60	1.30-1.60	0.20-2.00	0.10-0.18	3.0-5.9	0.0-0.5	.32	.32	1	1	1

Table 24.--Physical Properties of the Soils--Continued

Table 24.--Physical Properties of the Soils--Continued

Component name	ercent	Map symbol and		Clay	Moist	Permea-	  Available		Organic	Erosi	on fac	tors	erodi-	Wind  erodi-
In	of	component name	. ! !		bulk	bility	water	extensi-	matter					bility
1274B: Redby	ap uni						<del></del>	<u> </u>	<u> </u>	Kw	Kf	T	group	index
Redby			In	Pct	g/cc   	In/hr	In/in	Pct	Pct					
Redby		274B:			 		 	 	 		 	l I	 	1
Hiwood	40		0-10	2-10	  1.40-1.60	6.00-20	0.08-0.12	0.0-2.9	0.5-2.0	.17	.17	5	2	134
Hiwood		-	10-35	1-8	1.55-1.70	6.00-20	0.07-0.10	0.0-2.9	0.0-0.5	.17	.17	i	İ	İ
Leafriver, wooded 15			35-80	0 - 6	1.55-1.70	6.00-20	0.06-0.08	0.0-2.9	0.0-0.5	.17	.17	İ	į	İ
Leafriver, wooded 15														
Leafriver, wooded 15	30	liwood	1 1				1	1	1	1		5	2	134
Leafriver, wooded 15		!	1 1											1
10-13			32-80	1-10	1.55-1.70	6.00-20	0.05-0.08	0.0-2.9	0.0-0.5	.15	.15	 	 	
Clearriver	15	Leafriver, wooded	0-10		0.10-0.25	0.60-6.00	0.35-0.50		50-90			5	2	134
Clearriver		İ	10-13	3-18	1.40-1.65	2.00-20	0.08-0.14	0.0-2.9	5.0-20	.17	.17	ĺ	İ	İ
2-21   3-10   1.55-1.70   6.00-20   0.06-0.11   0.0-2.9   0.0-0.5   1.5   1.5			13-80	0-10	1.50-1.65	6.00-20	0.03-0.08	0.0-2.9	0.5-5.0	.17	.17	ļ	İ	İ
	5	learriver	0-2	5-15	  1 40-1 60	6 00-20	  0 10-0 12	0 0-2 9	   1 0-2 0		   17	   5		134
Cormant	3	,Tealityer								1 '		]	4	134
Commerman   Simm		ſ					1	1	1	1		i		
Commerman   Simm			i i		i i		İ	İ	İ	i	İ	i	İ	İ
Zimmerman	5	Cormant	0-6	3-10	1.30-1.50	6.00-20	0.08-0.12	0.0-2.9	2.0-10	.17	.17	5	2	134
1298:			6-80	0 - 5	1.50-1.70	6.00-20	0.06-0.10	0.0-2.9	0.5-1.0	.17	.17			
1298:	5	immerman	0-6	2-5	  1 45_1 65	6 00-20	0 07-0 09	0 0-2 9	   0 5-1 0		   17	   5	1	220
1298:  Borup	5	Timmerman	1 1							1 '		]	-	220
Borup			i				İ				ĺ	i	İ	İ
8-80   10-18   1.30-1.50   2.00-6.00   0.17-0.20   0.0-2.9   1.0-3.0   .32   .32		298:	i i		j j		į	İ	j	İ	İ	İ	į	į
Augsburg, depressional 3   0-9   10-27   1.20-1.40   0.60-2.00   0.20-0.23   0.0-2.9   5.0-8.0   .28   .28   5   4L   9-16   5-18   1.30-1.50   2.00-6.00   0.20-0.23   0.0-2.9   1.0-3.0   .28   .28     16-32   5-18   1.40-1.60   2.00-6.00   0.17-0.22   0.0-2.9   0.5-1.0   .28   .28     32-80   35-85   1.10-1.40   0.0000-0.20   0.10-0.14   6.0-8.9   0.0-0.5   .28   .28	90	Borup	0-8	15-27	1.20-1.40	2.00-6.00	0.20-0.23	0.0-2.9	4.0-8.0	.28	.28	5	4L	86
9-16   5-18   1.30-1.50   2.00-6.00   0.20-0.23   0.0-2.9   1.0-3.0   .28   .28			8-80	10-18	1.30-1.50	2.00-6.00	0.17-0.20	0.0-2.9	1.0-3.0	.32	.32			
9-16   5-18   1.30-1.50   2.00-6.00   0.20-0.23   0.0-2.9   1.0-3.0   .28   .28	3	Augsburg, depressional	0-9	10-27	  1.20-1.40	0.60-2.00	  0.20-0.23	   0.0-2.9	   5.0-8.0	.28	   .28	   5	   4т.	   86
Glyndon			9-16							1		-	i	
Glyndon			16-32	5-18	1.40-1.60	2.00-6.00	0.17-0.22	0.0-2.9	0.5-1.0	.28	.28	i	İ	İ
7-80   10-18   1.30-1.50   0.60-6.00   0.17-0.20   0.0-2.9   1.0-2.0   .43   .43      Sago			32-80	35-85	1.10-1.40	0.0000-0.20	0.10-0.14	6.0-8.9	0.0-0.5	.28	.28	İ	į	į
Sago	2	77		15 00		0 60 2 00								86
Sago 2   0-14     0.15-0.25   0.60-6.00   0.35-0.45   0.0-2.9   50-95       5   2	3	;Iyndon	1 1				1	1	1	1		5	3	86
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			7-80	10-10	1.30-1.30	0.80-8.00	0.17-0.20	0.0-2.9	1.0-2.0	.43	•43	 	 	
14-80   6-18   1.50-1.70   0.60-2.00   0.14-0.20   0.0-2.9   0.0-2.0   .28   .28	2	Jago	0-14		0.15-0.25	0.60-6.00	0.35-0.45	0.0-2.9	50-95			5	2	134
			14-80	6-18	1.50-1.70	0.60-2.00	0.14-0.20	0.0-2.9	0.0-2.0	.28	.28	ĺ	İ	İ
	2	71		F 10		6 00 00				17				124
Skime	2	Kime	1 1				1		1	1 '		5 	4	134
$\begin{vmatrix} 6-17 & 2-10 & 1.35-1.50 & 6.00-20 & 0.08-0.11 & 0.0-2.9 & 0.0-1.0 & 1.15 & $							1	1	1	1		l I	 	1
$\begin{vmatrix} 1/-22 & 10-18 & 1.25-1.40 & 2.00-6.00 & 0.12-0.17 & 0.0-2.9 & 0.0-0.5 & .24 & .24 &   &   &   &   &   &   &   &   &   & $							1	1	1	1		I I	I I	I I
										1		i I	1	
			00									<u> </u>		

Map symbol and	Percent	Depth	   Clay	Moist	Permea-	Available	1	   Organic	Erosi	on fac	tors	erodi-	Wind  erodi-
component name	of			bulk	bility	water	extensi-	matter				bility	
	map unit	l In	   Pct	density g/cc	In/hr	capacity   In/in	bility   Pct	Pct	Kw	Kf	T	group	index
	 	111	PCC	g/cc	111/111	111/111	PCL	PCL		 	 	l I	 
1302:	İ	İ	į	j i		İ	į	İ	i	İ	İ	į	i
Foldahl	85	0-12	4-15	1.30-1.50	2.00-6.00	0.14-0.18	0.0-2.9	2.0-5.0	.20	.20	5	3	86
		12-30		1.45-1.60		0.07-0.12		0.5-1.0	.20	.20			
		30-80	18-35	1.50-1.65	0.20-2.00	0.14-0.19	3.0-5.9	0.0-0.5	.37	.37			
Kratka	10	0-8	5-15	1.20-1.50	2.00-6.00	0.13-0.18	0.0-2.9	2.0-5.0	.20	.20	3	   3	86
	ĺ	8-22	2-10	1.30-1.60	6.00-20	0.06-0.11	0.0-2.9	0.5-1.0	.17	.17	ĺ	ĺ	İ
		22-80	10-30	1.50-1.80	0.20-2.00	0.11-0.19	3.0-5.9	0.0-0.5	.37	.37	İ	ĺ	
Foxhome	   5	   0-10	10-20	  1.35-1.50	2.00-6.00	0.13-0.18	0.0-2.9	3.0-7.0	.20	.20	   3	   3	86
		10-15		1.45-1.60		0.07-0.12	1	0.5-1.0	.20	.20	ĺ	İ	İ
		15-23	1-5	1.50-1.70	6.00-20	0.02-0.07	0.0-2.9	0.5-1.0	.05	.15	i	İ	İ
		23-80	12-35	1.40-1.70	0.60-2.00	0.15-0.22	0.0-2.9	0.0-0.5	.32	.37	į	į	į
1304:	 	 	 	 			 			 	 	l I	 
Glyndon	85	0-11	15-20	1.20-1.40	0.60-2.00	0.20-0.23	0.0-2.9	3.0-7.0	.28	.28	5	3	86
-		11-56	10-18	1.30-1.50	0.60-6.00	0.17-0.20	0.0-2.9	1.0-2.0	.43	.43	i	İ	İ
		56-80	5-18	1.35-1.65	2.00-6.00	0.15-0.19	0.0-2.9	0.0-0.5	.43	.43	į	į	į
Borup	10	   0-8	   15-27	1.20-1.40	2.00-6.00	0.20-0.23	0.0-2.9	4.0-8.0	.28	.28	   5	   4L	86
-		8-80	10-18	1.30-1.50	2.00-6.00	0.17-0.20	0.0-2.9	1.0-3.0	.32	.32	į	į	
Skime	   5	   0-6	   5-10	  1.35-1.50	6.00-20	0.08-0.12	0.0-2.9	0.5-2.0		   .17	   5	   2	134
		6-17		1.35-1.50		0.08-0.11	0.0-2.9	0.0-1.0	.15	.15	ĺ	İ	i
		17-22	10-18	1.25-1.40	2.00-6.00	0.12-0.17	0.0-2.9	0.0-0.5	.24	.24	i	İ	İ
	j	22-72	2-5	1.50-1.70	6.00-20	0.05-0.08	0.0-2.9	0.0-0.5	.15	.15	i	į	i
		72-80	2-18	1.50-1.70	0.60-20	0.05-0.22	0.0-2.9	0.0-0.5	.15	.15	į	į	į
1305:	 	 	 	 			 			 	 	 	
Hilaire	85	0-13	8-18	1.30-1.45	2.00-6.00	0.13-0.18	0.0-2.9	2.0-4.0	.15	.20	3	3	86
	ĺ	13-33	3-10	1.25-1.40	6.00-20	0.07-0.14	0.0-2.9	1.0-2.0	.15	.15	ĺ	ĺ	İ
		33-80	35-60	1.35-1.55	0.06-0.20	0.09-0.19	6.0-9.0	0.0-0.5	.32	.32			
Espelie	11	   0-10	8-18	1.30-1.45	2.00-6.00	0.13-0.18	0.0-2.9	2.0-4.0	.20	.20	   5	   3	86
	j	10-27	3-10	1.35-1.60	2.00-20	0.06-0.11	0.0-2.9	0.5-1.0	.17	.17	İ	į	į
		27-80	35-60	1.35-1.60	0.06-0.20	0.09-0.19	6.0-8.9	0.0-0.5	.32	.32	į	į	į
Grano	   2	   0-11	   10-27	  1.30-1.60	0.60-6.00	0.10-0.16	0.0-2.9	2.0-5.0	.24	.24	   5	   5	   56
		11-41	1	1.20-1.50		0.15-0.18	1	1.0-3.0	.32	.32	i	į	i
		41-80		1.20-1.60		0.15-0.18	1	0.0-0.5	.32	.32	į	į	į
Redby	   2	   0-3	2-10	  1.40-1.60	6.00-20	0.08-0.12	0.0-2.9	0.5-2.0		   .17	   5	   2	134
1	_	3-28		1.55-1.70		0.07-0.10	1	0.0-0.5	.17	.17	i -	, <u>-</u>	
		28-80		1.55-1.70		0.06-0.08	1	0.0-0.5	.17	.17	i	İ	i
	İ		İ	į i		İ	İ	İ	İ	Ì	İ	İ	İ

Table 24.--Physical Properties of the Soils--Continued

Table 24.--Physical Properties of the Soils--Continued

Map symbol and	Percent	Depth	   Clay	Moist	Permea-	  Available		   Organic	Erosi	on fac	tors	erodi-	Wind  erodi-
component name	of			bulk	bility	water	extensi-	matter		   Kf			bility
	map unit	l In	   Pct	density g/cc	   In/hr	capacity In/in	bility   Pct	Pct	Kw	KE	T	group	Index
		111	PCL	<b>g</b> /cc	111/111	111/111	PGC	PCL			 	1	1
1314:		! 		 	 					i	i		
Tacoosh	90	0-17	0-0	0.10-0.20	0.60-6.00	0.45-0.55	j	75-99		i	2	5	56
		17-33	0 - 0	0.10-0.20	0.60-6.00	0.45-0.55		75-99					
		33-80	15-35	1.40-1.65	0.20-2.00	0.16-0.22	3.0-5.9	0.0-0.5	.43	.43	ļ		
Rifle	8	   0-8		  0.10-0.25	0.60-6.00	  0.48-0.58	 	   75-99		 	   3	   5	56
RILLE	•	0-8   8-80		0.10-0.25	1	0.48-0.58	1	25-99			3	5	56
		0-00 			0.00-0.00		 	23-33				İ	İ
Sax	2	0-15	0-1	0.15-0.25	0.20-6.00	0.35-0.45	i	25-70	i		5	2	134
		15-24	18-35	1.30-1.50	0.60-2.00	0.17-0.22	0.0-2.9	1.0-15	.28	.28	ĺ	ĺ	İ
		24-39	18-35	1.30-1.50	0.60-2.00	0.17-0.22	0.0-2.9	0.5-1.0	.43	.43			
		39-71	10-35	1.30-1.55	0.60-2.00	0.14-0.22	0.0-2.9	0.0-0.5	.43	.43			
		71-80	27-60	1.30-1.60	0.06-0.60	0.09-0.19	6.0-8.9	0.0-0.5	.43	.43			
1316:		 		 	 	 	 	 		 	l I		
Wheatville	85	0-12	15-27	1.25-1.40	2.00-6.00	0.18-0.22	0.0-2.9	3.0-7.0	.28	.28	   5	   4L	86
		12-35		1.35-1.55	1	0.15-0.21		0.5-1.0	.28	.28	i	i	
		35-80	35-80	1.15-1.50	0.06-0.20	0.10-0.14	6.0-8.9	0.0-0.5	.28	.28	İ	İ	İ
3aha	12	   0-9	10 27		0.60-2.00		0.0-2.9				   5	   4L	86
Augsburg	13	0-9   9-33		1.30-1.40		0.20-0.23	1	1.0-3.0	.28	.28	5	411	86
		33-80			0.0000-0.20			0.0-0.5	.28	.28	l I	1	1
		33-00	33-03	1.10-1.40 			0.0-0.5		.20	.20			İ
Grano	2	0-11	10-27	1.30-1.60	0.60-6.00	0.10-0.16	0.0-2.9	2.0-5.0	.24	.24	5	5	56
		11-41	35-60	1.20-1.50	0.06-0.20	0.15-0.18	6.0-8.9	1.0-3.0	.32	.32			
		41-80	22-60	1.20-1.60	0.06-0.20	0.15-0.18	6.0-8.9	0.0-0.5	.32	.32	ļ		
1326:		 	 	 	 	 	 	 		 			
Augsburg, depressional	45	0-9	10-27	1.20-1.40	0.60-2.00	0.20-0.23	0.0-2.9	5.0-8.0	.28	.28	5	4L	86
		9-16	5-18	1.30-1.50	2.00-6.00	0.20-0.23	0.0-2.9	1.0-3.0	.28	.28	İ	į	İ
		16-32	5-18	1.40-1.60	2.00-6.00	0.17-0.22	0.0-2.9	0.5-1.0	.28	.28	ĺ	İ	İ
		32-80	35-85	1.10-1.40	0.0000-0.20	0.10-0.14	6.0-8.9	0.0-0.5	.28	.28	ļ		!
Wabanica, depressional	45	   0-8	10.07		0.60-2.00			   8.0-12	.28	   .28	   5	   4L	   86
wabanica, depressional	45	0-8   8-26			1	0.16-0.22	1	2.0-5.0	.43	.43	5	411	86
		26-68				0.16-0.22		0.0-1.0	.43	.43	l I	1	I I
		68-80		1.15-1.40	1	0.09-0.13	1	0.0-1.0	.32	32			İ
			j		j			İ	i	İ	į	į	į
Sax	6	0-15	0-1	0.15-0.25	0.20-6.00	0.35-0.45		25-70			5	2	134
		15-24	18-35	1.30-1.50	0.60-2.00	0.17-0.22	0.0-2.9	1.0-15	.28	.28			
		24-39			1	0.17-0.22	1	0.5-1.0	.43	.43			
		39-71		1.30-1.55		0.14-0.22		0.0-0.5	.43	.43			
		71-80	27-60	1.30-1.60	0.06-0.60	0.09-0.19	6.0-8.9	0.0-0.5	.43	.43	ļ	ļ	

component name	of map unit	   In     0-10   10-27   27-80 	3-10	bulk   density   g/cc      1.30-1.45  1.35-1.60	bility 	water  capacity   In/in 	extensi-   bility   Pct 	matter 	Kw	   Kf 	   T 	bility  group	
Espelie      	2	   0-10   10-27   27-80	     8-18   3-10	g/cc      1.30-1.45			<u> </u>	Pct	Kw	Kf	T 	group	index
Espelie      		   0-10   10-27   27-80	     8-18   3-10	1.30-1.45		1n/1n   	PCt 	PCT					
Espelie      		10-27 27-80	3-10			l I	I			i	i	l I	 
-   		10-27 27-80	3-10		2 00 6 00	1				i	İ		
 	2	27-80		1 35-1 60	2.00-6.00	0.13-0.18	0.0-2.9	2.0-4.0	.20	.20	5	3	86
 	2	İ	35-60			0.06-0.11		0.5-1.0	.17	.17			
  Zippel  	2	   0-10	1	1.35-1.60	0.06-0.20	0.09-0.19	6.0-8.9	0.0-0.5	.32	.32			
lippei	-		   10-18	  1.35-1.50	2.00-6.00	0.16-0.22	   0 0-2 9	2.0-6.0	.28	   .28	   5	   3	   86
		10-16	1	1.40-1.55	2.00-6.00	0.15-0.20		0.0-1.0	.37	.37	]		
İ		16-80		1.40-1.55		0.15-0.20		0.0-0.5	.37	.37		İ	İ
1327B:   Karlstad	65	   0-11	1 10	  1.40-1.60	6 00 20	  0.10-0.12		1.0-4.0		   .17	   3	   2	134
Railstad	65	11-14		1.35-1.60		0.10-0.12	1	0.5-2.0	.24	.24	3 	<u>4</u> 	134
		14-16			2.00-6.00	0.13-0.16		0.0-0.5	1.10	1.17	 	 	i i
		16-80		1.50-1.70		0.02-0.04		0.0-0.5	1.10	.17	! 	 	İ
İ											į	İ	İ
Marquette	25	0-10	1-10	1.40-1.60	6.00-20	0.10-0.14	0.0-2.9	1.0-3.0	.17	.17	5	2	134
		10-18		1.50-1.70		0.10-0.16	1	0.5-1.0	.15	.20			
		18-80	1-5	1.50-1.70	20-60	0.02-0.04	0.0-2.9	0.0-0.5	.05	.15			
Sahkahtay	7	   0-4	   5-15	  1.35-1.50	2.00-6.00	0.10-0.14	   0.0-2.9	2.0-4.0	.20	.20	   5	   3	   86
	•	4-8		1.45-1.55		0.05-0.08		0.5-1.0	.15	.15			
		8-14	18-30	1.40-1.55	0.60-2.00	0.13-0.17	3.0-5.9	0.5-1.0	.28	.28	İ	İ	İ
İ		14-80	1-8	1.50-1.70	20-40	0.03-0.06	0.0-2.9	0.0-0.5	.10	.15	İ	İ	İ
Redby	3	   0-3	2.10	  1.40-1.60		  0.08-0.12		0.5-2.0		   .17	   5	   2	134
keapy	3	3-28		1.55-1.70		0.08-0.12	1	0.0-0.5	1.17	1 .17	5	<u>4</u> 	134
		28-80		1.55-1.70		0.06-0.08	1	0.0-0.5	1.17	1.17			
İ		İ	İ	İ	İ	İ	İ	İ	İ	İ	İ	İ	İ
1328:			!							!			
Northwood, wooded	90	0-15		0.18-0.25		0.35-0.45	1	50-85			5	2	134
		15-21   21-39		1.45-1.65		0.09-0.17		1.0-3.0	1.15	.15   .15			
		39-80		1.40-1.75		0.14-0.19	1	0.0-0.5	.13	37	l I	 	I I
		33-00	7-30	1.40-1.75	0.00-2.00		3.0-3.7		.57	.57	 	İ	
Berner, wooded	5	0-20		0.15-0.35	0.20-6.00	0.35-0.48	i	80-95	j	j	2	2	134
		20-44	0-5	1.50-1.75	6.00-20	0.05-0.10	0.0-2.9	0.0-0.5	.05	.15			
		44-80	10-27	1.45-1.65	0.20-2.00	0.14-0.22	3.0-5.9	0.0-0.5	.32	.37			
Grygla	5	   0-6	   2-15	  1.40-1.60	   6 00-20	  0.13-0.15	   0 0-2 9	1.0-4.0	.15	   .15	   5	   2	   134
01/914	3	6-26		1.50-1.70		0.06-0.11	1	0.5-1.0	1.15	1.15	]	, <del>-</del>	131
İ		26-80		1.30-1.75		0.17-0.19	1	0.0-0.5	.37	.37		İ	İ
										!		ļ	
1333:   Dora, wooded	90	   0-8	 	0 15-0 35	   0.60-6.00	  0.35-0.55	 	   21-90		 	   2	   2	134
Dola, wooded	30	0-8   8-26	1	0.15-0.35		0.35-0.55	 	21-90			<b>4</b> 	<b>4</b> 	1 134
l I		26-80	1		0.000-0.06		1	0.0-0.5	.32	.32		İ	
		İ	i			1	1		1				

Table 24.--Physical Properties of the Soils--Continued

Table 24.--Physical Properties of the Soils--Continued

Map symbol and	Percent	Depth	Clay	Moist	Permea-	  Available		Organic		on fac		erodi-	Wind  erodi-
component name	of			bulk	bility	water	extensi-	matter	_		! _		bility
	map unit	l In	Pct	density g/cc	T /h	capacity In/in	bility   Pct	Pct	Kw	Kf	T	group	index
	 	1 <b>n</b> 	PCC 	<b>g</b> /cc	In/hr	1n/1n 	PCt 	PCt 		 	 	l I	
1333:		İ	İ	İ					i	İ	İ	İ	İ
Lupton	4	0-16	0-0	0.10-0.35	0.20-6.00	0.35-0.45		70-90			3	2	134
		16-80	0-0	0.10-0.35	0.20-6.00	0.35-0.45							
Wildwood	   4	   0-12	 	  0.10-0.25	0.20-6.00	  0.35-0.45	 	   25-99		 	   5	   2	134
WIIdWOOd	<del>*</del> 	12-33	1	1.35-1.45		0.00-0.04	1	0.0-0.5	.28	.28		4	134
	 	33-80			0.0000-0.20	1	1	0.0-0.5	.28	.28	 		ì
	! 									120	i	İ	İ
Auganaush	2	0-5	12-27	1.35-1.55	0.60-2.00	0.20-0.24	0.0-2.9	3.0-8.0	.32	.32	5	6	48
		5-7	5-18	1.40-1.60	0.60-2.00	0.16-0.24	0.0-2.9	1.0-3.0	.24	.24			
		7-18	35-60	1.25-1.50	0.06-0.60	0.10-0.19	6.0-8.9	0.0-0.5	.28	.28			
		18-58	30-45	1.30-1.55		0.14-0.19		0.0-0.5	.32	.32			
		58-80	18-35	1.25-1.50	0.20-2.00	0.16-0.19	3.0-5.9	0.0-0.5	.37	.37			
1356:	 	 	l I	 	 	 	 	 		 	l I	 	l I
Water, miscellaneous.	! 	! 		İ	i I						i		
•		İ	İ	İ	İ	İ	İ	İ	i	İ	ĺ	İ	İ
1399B:	ĺ		ĺ	ĺ	ĺ	ĺ	ĺ	İ	İ	ĺ	ĺ		Ì
Two Inlets	85	0-2		1.40-1.60		0.10-0.12		0.5-1.0	.10	.15	5	2	134
		2-4		1.40-1.60	1	0.09-0.11		0.0-0.5	.10	.15			
		4-17		1.40-1.60		0.09-0.11		0.0-0.5	.10	.15	ļ	ļ	!
	 	17-80	0-3	1.60-1.80	20-40	0.02-0.04	0.0-2.9	0.0-0.5	.05	.10			
Wurtsmith	   6	   0-5	   3-8	  1.50-1.65	6.00-20	0.08-0.12	0.0-2.9	0.5-2.0	1 .17	   .17	   5	2	134
	İ	5-45		1.35-1.65	1	0.05-0.11	1	0.0-0.5	.15	.15		i -	
		45-80		1.50-1.70	1	0.04-0.07		0.0-0.5	.15	.15	İ	İ	İ
	İ	İ	İ	İ	j	İ	İ	į	į	į	İ	į	İ
Zimmerman	6	0-6	2-5	1.45-1.65	6.00-20	0.07-0.09	0.0-2.9	0.5-1.0	.17	.17	5	1	220
		6-80	2-10	1.50-1.70	6.00-20	0.06-0.10	0.0-2.9	0.0-0.5	.17	.17			
Meehan	   3	   0-8	   4-10	  1.35-1.65	2.00-6.00	  0.10-0.12	0.0-2.9	0.5-3.0	1 .17	   .17	   5	   2	134
	İ	8-31		1.60-1.70	1	0.06-0.11	1	0.0-0.5	.15	.15		i -	
		31-80		1.60-1.70	1	0.02-0.07		0.0-0.5	.15	.15	i	İ	İ
1401:					!			!		!	ļ	ļ	
Grygla, depressional	90	0-5		1.40-1.60	1	0.10-0.15	1	1.0-10	.15	.15	5	2	134
		5-36		1.50-1.70		0.06-0.11		0.0-1.0	.15	.15	ļ		ļ
	 	36-80	8-27	1.30-1.75	0.20-2.00	0.17-0.19	3.0-5.9	0.0-0.5	.37	.37	 	1	
Northwood, wooded	   5	   0-15		0.18-0.25	2.00-6.00	0.35-0.45	 	50-85		 	   5	2	134
	İ	15-21		1.45-1.65	1	0.09-0.17	1	1.0-3.0	.15	.15	i	<u>'</u>	
	İ	21-39		1.55-1.70	1	0.06-0.11	1	0.0-0.5	.15	.15	i	İ	į
	İ	39-80	7-30	1.40-1.75	0.60-2.00	0.14-0.19	3.0-5.9	0.0-0.5	.37	.37	İ	İ	į
	İ	İ	İ		İ	İ	İ	İ	İ	İ	İ	İ	İ

Map symbol and	Percent	Depth	   Clay	   Moist	Permea-	  Available	   Linear	   Organic	Erosio	on fact	ors	Wind  erodi-	Wind  erodi
component name	of			bulk	bility	water	extensi-	matter				bility	bility
	map unit			density		capacity	bility		Kw	Kf	Т	group	index
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
401:			 	 			 	 				 	 
Chilgren	3	0-5	5-18	1.30-1.60	2.00-6.00	0.16-0.18	0.0-2.9	1.0-3.0	.28	.28	5	3	86
	i	5-9	2-18	1.40-1.60	0.60-2.00	0.13-0.22	0.0-2.9	0.5-1.0	.28	.28		İ	i
	i	9-16	18-35	1.30-1.70	0.60-2.00	0.18-0.22	3.0-5.9	0.0-0.5	.28	.28		İ	i
	İ	16-80				0.14-0.19		0.0-0.5	.28	.28		İ	İ
Grygla	2	0-6	2_15	  1.40-1.60	6 00-20	0.13-0.15	0 0-2 9	1.0-4.0	1.15	   .15	5	2	   134
Giygia	- 1	6-26		1.50-1.70		0.06-0.11		0.5-1.0	1.15	1 .15	,	4	131
		26-80			0.20-2.00	1		0.0-0.5	.37	.37			
400	ļ												
.402:		0.10			0 60 6 05		Į.		1		_		
Leafriver, wooded	90	0-10	1	0.10-0.25			1	50-90			5	2	134
	ļ	10-13		1.40-1.65		0.08-0.14		5.0-20	.17	.17			
		13-80	0-10	1.50-1.65  	6.00-20	0.03-0.08	0.0-2.9	0.5-5.0	.17	.17 			 
Cormant	4	0 - 6	3-10	1.30-1.50	6.00-20	0.08-0.12		2.0-10	.17	.17	5	2	134
		6-80	0-5	1.50-1.70	6.00-20	0.06-0.10	0.0-2.9	0.5-1.0	.17	.17			
Tawas	4	0-10	 	  0.15-0.35	0.20-6.00	0.35-0.45	 	   40-60		 	2	   2	   134
	i	10-27		0.15-0.35		0.35-0.45		40-60	i			İ	
	į	27-80	0-10	1.40-1.65	6.00-20	0.03-0.10	0.0-2.9		.15	.15		į	
Redby	2	0-3	   2-10	  1.40-1.60	6 00-20	0.08-0.12	0.0-2.9	0.5-2.0		   .17	5	2	   134
neady	- 1	3-28		1.55-1.70		0.07-0.10	1	0.0-0.5	.17	.17	-	_	131
	i	28-80		1.55-1.70		0.06-0.08		0.0-0.5	.17	.17			
1404:	ļ												
Berner, wooded	90	0-20	 	  0.15-0.35	0.20-6.00	0 35-0 48	 	   80-95		l I	2	   2	   134
2021101,00404		20-44	1	1.50-1.75		0.05-0.10	1	0.0-0.5	.05	.15	_	<del>-</del>	-0
	i	44-80		1.45-1.65		0.14-0.22		0.0-0.5	.32	.37			
Lupton	4	0-16	0-0	  0 10-0 35	0.20-6.00	0.35-0.45	 	   70-90		 	3	2	   134
парсоп	- I	16-80		0.10-0.35		0.35-0.45	1	70-50			,	2	134
Wanthan A A. A.		0.15			0 00 6 00		 				_		
Northwood, wooded	4	0-15 15-21	1	0.18-0.25   1.45-1.65	2.00-6.00		1	50-85		   .15	5	2	134
		-				0.09-0.17							
		21-39 39-80		1.55-1.70   1.40-1.75	6.00-20 0.60-2.00	0.06-0.11		0.0-0.5	.15	.15 .37			 
_	į			į į		į.	İ	İ					
Grygla	2	0-6		1.40-1.60		0.13-0.15	1	1.0-4.0	.15	.15	5	2	134
		6-26		1.50-1.70		0.06-0.11		0.5-1.0	.15	.15			
		26-80	8-27	1.30-1.75	0.20-2.00	0.17-0.19	3.0-5.9	0.0-0.5	.37	.37			

Table 24.--Physical Properties of the Soils--Continued

Table 24.--Physical Properties of the Soils--Continued

Map symbol and	   Percent	   Depth	   Clay	   Moist	Permea-	Available	   Linear	   Organic	Erosi	on fact	tors		Wind  erodi-
component name	of	202011	0247	bulk	bility	water	extensi-	matter		ī			bility
	map unit	İ	İ	density		capacity	bility		Kw	Kf	т	group	-
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
1405:	 	 	 	 							 	 	 
Lallie	90	0-8	18-27	1.20-1.30	0.06-0.20	0.12-0.15	3.0-5.9	8.0-16	.37	.37	5	8	0
		8-80	27-60	1.25-1.35	0.06-0.20	0.10-0.15	6.0-8.9	2.0-8.0	.37	.37			
Sax	   7	0-15	0-1	0.15-0.25	0.20-6.00	0.35-0.45		25-70			   5	2	134
		15-24		1.30-1.50		0.17-0.22	1	1.0-15	.28	.28			
		24-39		1.30-1.50		0.17-0.22		0.5-1.0	.43	.43			
		39-71		1.30-1.55		0.14-0.22		0.0-0.5	.43	.43			
	 	71-80 	27-60	1.30-1.60	0.06-0.60	0.09-0.19	6.0-8.9	0.0-0.5	.43	.43	 	 	
Wabanica	3	0-8	1	1.35-1.55		0.17-0.22	1	2.0-4.0	.28	.28	5	4L	86
		8-19		1.35-1.60		0.17-0.22		0.5-1.0	.28	.28			
	 	19-80	18-35	1.45-1.65	0.60-2.00	0.17-0.22	0.0-2.9	0.0-0.5	.28	.28	 	 	 
1414:		İ									İ		İ
Nereson, very cobbly	85	0-7		1.35-1.45		0.14-0.17	1	4.0-6.0	.17	.20	5	3	86
		7-11		1.35-1.45	0.60-2.00	0.18-0.22		0.5-1.0	.24	.28	ļ	ļ	!
		11-29		1.50-1.65	0.60-6.00	0.16-0.18		0.0-0.5	.24	.28			
	 	29-80	12-18 	1.50-1.65	0.60-6.00	0.16-0.18	0.0-2.9	0.0-0.5	.24	.28 	 	 	 
Percy, very cobbly	10	0-8		1.30-1.60		0.18-0.22	1	4.0-9.0	.24	.28	5	5	56
		8-23	1	1.30-1.60		0.15-0.19	1	0.5-1.0	.24	.28	ļ	ļ	!
	 	23-80	7-18 	1.60-1.80	0.60-2.00	0.12-0.19	0.0-2.9	0.0-0.5	.24	.28	 		 
Pelan	3	0-6				0.10-0.13		0.5-3.0	.24	.24	5	3	86
		6-12		1.50-1.65		0.05-0.11	1	0.5-1.0	.20	.24			
		12-24		1.55-1.70		0.02-0.09	1	0.0-0.5	.20	.20	ļ	ļ	!
	 	24-60 	8-18 	1.40-1.75	0.60-2.00	0.14-0.18	0.0-2.9	0.0-0.5	.28	.28	 		 
Foxhome	2	0-10			2.00-6.00			3.0-7.0	.20	.20	3	3	86
		10-15		1.45-1.60		0.07-0.12	1	0.5-1.0	.20	.20	ļ		
		15-23		1.50-1.70		0.02-0.07	1	0.5-1.0	.05	.15			
	 	23-80	12-35	1.40-1.70	0.60-2.00	0.15-0.22	0.0-2.9	0.0-0.5	.32	.37 	 	 	 
1428:	į		į	į		į	į	į	į	į	ĺ	į	į
Karlsruhe	85	0-8				0.10-0.15	1	4.0-7.0	.20	.20	5	3	86
		8-16		1.20-1.50		0.09-0.14	1	1.0-3.0	.20	.20	ļ	ļ	!
	 	16-80 	0-5 	1.30-1.60	6.00-40	0.02-0.07	0.0-2.9	0.0-0.5	1.10	.15 	 	 	 
Syrene	10	0-11		1.25-1.45		0.13-0.18	1	3.0-8.0	.20	.20	3	3	86
		11-19		1.30-1.50		0.15-0.19		0.0-2.0	.37	.37		ļ	!
	 	19-80	2-10	1.50-1.70	6.00-20	0.02-0.04	0.0-2.9	0.0-0.5	.10	.10	 	 	 
Ulen	5	0-10	8-20	1.30-1.50	2.00-6.00	0.13-0.18	0.0-2.9	2.0-5.0	.20	.20	3	3	86
		10-16		1.45-1.65		0.06-0.10		0.0-1.0	.17	.17			
		16-67		1.50-1.70		0.06-0.08		0.0-0.5	.15	.15			ļ
		67-80	10-18	1.20-1.50	0.60-2.00	0.15-0.19	0.0-2.9	0.0-0.5	.32	.32	ļ		ļ

Map symbol and	Percent	Depth	Clay	   Moist	Permea-	  Available		Organic	Erosi	on fac	tors		Wind  erodi-
component name	of	рерсп	CIAY	bulk	bility	water	extensi-	matter		1	1	. 1	bility
component name	map unit		! 	density	DIIICY	capacity	bility	maccer	Kw	Kf	T	group	
	_	In	Pct	g/cc	In/hr	In/in	Pct	Pct	İ		İ	<u> </u>	İ
1444:	 		 	 	 	 	 	 		 			
Wurtsmith	85	0-5	3-8	1.50-1.65	6.00-20	0.08-0.12	0.0-2.9	0.5-2.0	.17	.17	5	2	134
	j	5-45	2-7	1.35-1.65	6.00-20	0.05-0.11	0.0-2.9	0.0-0.5	.15	.15	i	i	i
		45-80	0-4	1.50-1.70	6.00-20	0.04-0.07	0.0-2.9	0.0-0.5	.15	.15	į	į	į
Meehan	10	0-8	   4-10	  1.35-1.65	2.00-6.00	0.10-0.12	   0.0-2.9	0.5-3.0	.17	1 .17	5	2	134
	ĺ	8-31	4-9	1.60-1.70	6.00-20	0.06-0.11	0.0-2.9	0.0-0.5	.15	.15	ĺ	İ	İ
		31-80	1-4	1.60-1.70	6.00-20	0.02-0.07	0.0-2.9	0.0-0.5	.15	.15	İ	İ	
Clearriver	   2	0-2	   5-15	  1.40-1.60	   6.00-20	  0.10-0.12	   0.0-2.9	1.0-2.0	1.17	   .17	   5	2	134
	j	2-21	3-10	1.55-1.70	6.00-20	0.06-0.11	0.0-2.9	0.0-0.5	.15	.15	İ	İ	Ì
		21-80	1-5	1.55-1.70	6.00-20	0.02-0.06	0.0-2.9	0.0-0.5	.10	.15	į	į	į
Two Inlets	2	0-2	   2-10	  1.40-1.60	   6.00-20	0.10-0.12	   0.0-2.9	0.5-1.0	.10	1 .15	5	2	134
	İ	2-4	2-10	1.40-1.60	6.00-20	0.09-0.11	0.0-2.9	0.0-0.5	.10	.15	İ	į	Ì
		4-17	5-15	1.40-1.60	6.00-20	0.09-0.11	0.0-2.9	0.0-0.5	.10	.15			
		17-80	0-3	1.60-1.80	20-40	0.02-0.04	0.0-2.9	0.0-0.5	.05	.10			
Cormant	1	0 - 6	   3-10	  1.30-1.50	6.00-20	  0.08-0.12	   0.0-2.9	2.0-10	.17	   .17	5	2	134
		6-80	0-5	1.50-1.70	6.00-20	0.06-0.10	0.0-2.9	0.5-1.0	.17	.17	İ	İ	
1448:			 	 		 	 						
Grano	90	0-13	40-60	1.20-1.50	0.06-0.20	0.13-0.17	6.0-8.9	3.0-6.0	.28	.28	5	4	86
		13-54	35-60	1.20-1.50	0.06-0.20	0.15-0.18	6.0-8.9	1.0-3.0	.32	.32			
		54-80	22-60	1.20-1.60	0.06-0.20	0.15-0.18	6.0-8.9	0.0-0.5	.32	.32			
Percy	5	0-10	10-30	  1.30-1.60	0.60-2.00	0.18-0.22	   3.0-5.9	4.0-9.0	.24	.28	5	5	56
		10-25	10-18	1.30-1.60	0.60-2.00	0.15-0.19	0.0-2.9	0.5-1.0	.24	.28			
		25-80	7-18	1.60-1.80	0.60-2.00	0.12-0.19	0.0-2.9	0.0-0.5	.24	.28			
Augsburg	3	0-9				0.20-0.23	0.0-2.9	4.0-6.0	.28	.28	5	4L	86
		9-33				0.20-0.23		1.0-3.0	.28	.28			
		33-80	35-85	1.10-1.40	0.0000-0.20	0.10-0.14	6.0-8.9	0.0-0.5	.28	.28			
Woodslake	2	0 - 8	   41-65	  1.45-1.65	0.06-0.60	0.10-0.14	   6.0-8.9	3.0-5.0	.28	.28	5	4	86
		8-15			0.0000-0.06	1		0.5-1.0	.28	.28			
		15-36			0.02-0.06	1		1	.28	.28			
		36-80	25-50	1.30-1.45	0.02-0.06	0.09-0.22	6.0-8.9	0.0-0.5	.43	.43			
1449:													
Grano	90	0-11		1.30-1.60		0.10-0.16		2.0-5.0	.24	.24	5	5	56
		11-41		1.20-1.50		0.15-0.18		1.0-3.0	.32	.32			
		41-80	22-60	1.20-1.60	0.06-0.20	0.15-0.18	6.0-8.9	0.0-0.5	.32	.32			

Table 24.--Physical Properties of the Soils--Continued

Table 24.--Physical Properties of the Soils--Continued

Composition   Many unit	Map symbol and component name	Percent of	   Depth	   Clay	   Moist   bulk	Permea-	  Available   water	   Linear  extensi-	   Organic   matter	Erosi	on fac	tors	erodi-	Wind  erodi-  bility
In	component name	1	 	 		DITTEY			Maccel	Kw	K£	T		-
Percy			In	Pct	<u> </u>	In/hr		·	Pct					
10-25   10-18   1.30-1.60   0.60-2.00   0.15-0.19   0.0-2.9   0.5-1.0   24   28	1449:	 	 		 	 	 		 			 		
Augsburg	Percy	5	0-10	10-30	1.30-1.60	0.60-2.00	0.18-0.22	3.0-5.9	4.0-9.0	.24	.28	5	5	56
Augsburg			10-25	10-18	1.30-1.60	0.60-2.00	0.15-0.19	0.0-2.9	0.5-1.0	.24	.28			
9-33   5-18   1.30-1.50   2.00-6.00   0.20-0.23   0.0-2.9   1.0-3.0   2.8   2.8			25-80	7-18	1.60-1.80	0.60-2.00	0.12-0.19	0.0-2.9	0.0-0.5	.24	.28			
Woodslake	Augsburg	   3	0-9	10-27	1.20-1.40	0.60-2.00	0.20-0.23	0.0-2.9	4.0-6.0	.28	.28	   5	   4L	86
Woodslake			9-33	5-18	1.30-1.50	2.00-6.00	0.20-0.23	0.0-2.9	1.0-3.0	.28	.28			
8-15			33-80	35-85	1.10-1.40	0.0000-0.20	0.10-0.14	6.0-8.9	0.0-0.5	.28	.28			
15-36   60-85   1.35-1.45   0.02-0.06   0.09-0.13   6.0-8.9   0.0-0.5   .28   .28	Woodslake	2	0-8	41-65	  1.45-1.65	0.06-0.60	  0.10-0.14	6.0-8.9	3.0-5.0	.28	.28	   5	4	86
1807: Cathro, ponded			8-15	60-85	1.35-1.45	0.0000-0.06	0.09-0.13	6.0-8.9	0.5-1.0	.28	.28			
1807: Cathro, ponded														
Cathro, ponded			36-80	25-50	1.30-1.45	0.02-0.06	0.09-0.22	6.0-8.9	0.0-0.5	.43	.43			
Haug	1807:		ļ				! 							
Haug	Cathro, ponded	90	0-19	0 - 0	0.15-0.35	0.20-6.00	0.45-0.55		60-85			2	8	0
10-16   10-18   1.20-1.60   0.60-6.00   0.12-0.24   0.0-2.9   4.0-6.0   .20   .20     16-80   10-18   1.40-1.60   0.60-2.00   0.11-0.19   0.0-2.9   0.5-1.0   .20   .20			19-80	10-30	1.50-1.70	0.20-2.00	0.11-0.22	0.0-2.9	1.0-5.0					
Seelyeville, ponded 4	Haug	4	0-10		0.13-0.42	0.60-6.00	0.35-0.48		50-90			   5	2	134
Seelyeville, ponded 4			10-16	1			0.12-0.24	0.0-2.9	4.0-6.0	.20	.20			
Percy			16-80	10-18	1.40-1.60	0.60-2.00	0.11-0.19	0.0-2.9	0.5-1.0	.20	.20		 	
Percy	Seelyeville, ponded	4	0-18		0.10-0.25	0.20-6.00	0.35-0.45		25-99			3	8	0
8-23   10-18   1.30-1.60   0.60-2.00   0.15-0.19   0.0-2.9   0.5-1.0   .24   .28			18-80		0.10-0.25	0.20-6.00	0.35-0.45		25-99					
23-80   7-18   1.60-1.80   0.60-2.00   0.12-0.19   0.0-2.9   0.0-0.5   .24   .28	Percy	2	0-8	10-30	  1.30-1.60	0.60-2.00	  0.18-0.22	3.0-5.9	4.0-9.0	.24	.28	   5	   5	56
1808:  Markey, ponded			8-23	10-18	1.30-1.60	0.60-2.00	0.15-0.19	0.0-2.9	0.5-1.0	.24	.28			
Markey, ponded			23-80	7-18	1.60-1.80	0.60-2.00	0.12-0.19	0.0-2.9	0.0-0.5	.24	.28			
17-80   0-10   1.40-1.65   6.00-20   0.03-0.08   0.0-2.9   0.0-0.5   .15   .15	1808:						 							
Leafriver	Markey, ponded	90	0-17		0.15-0.35	0.20-6.00	0.35-0.45		55-85			2	2	134
13-80   0-10   1.50-1.65   6.00-20   0.03-0.08   0.0-2.9   0.5-5.0   .17   .17			17-80	0-10	1.40-1.65	6.00-20	0.03-0.08	0.0-2.9	0.0-0.5	.15	.15			
Seelyeville, ponded 4   0-18     0.10-0.25   0.20-6.00   0.35-0.45     25-99       3   8	Leafriver	4	0-13		  0.10-0.25	0.60-6.00	  0.35-0.50		50-90			   5	2	134
18-80     0.10-0.25   0.20-6.00   0.35-0.45     25-99			13-80	0-10	1.50-1.65	6.00-20	0.03-0.08	0.0-2.9	0.5-5.0	.17	.17			
Cormant 2   0-6   3-10 1.30-1.50  6.00-20   0.08-0.12  0.0-2.9   2.0-10   .17   .17   5   2	Seelyeville, ponded	   4	0-18		0.10-0.25	0.20-6.00	0.35-0.45		25-99			   3	8	0
			18-80		0.10-0.25	0.20-6.00	0.35-0.45		25-99					
6-80   0-5   1.50-1.70   6.00-20     0.06-0.10   0.0-2.9   0.5-1.0   .17   .17	Cormant	2	   0-6	3-10	1.30-1.50	6.00-20	  0.08-0.12	0.0-2.9	2.0-10	.17	   .17	   5	   2	134
			6-80	0-5	1.50-1.70	6.00-20	0.06-0.10	0.0-2.9	0.5-1.0	.17	.17			

		,							Erosi	on fac	tors	1	Wind
Map symbol and	Percent of	Depth	Clay	Moist	Permea-	Available water	•	Organic		1		erodi-	
component name	or map unit			bulk density	bility	water  capacity	extensi-	matter	Kw	   Kf	l Imr	group	
	map unit	l In	   Pct	density	In/hr	In/in	Pct	Pct	KW	KL	1	group	Index
i					,				i	İ	İ	İ	İ
1918:			ĺ		ĺ		İ		Ì	İ	ĺ	ĺ	Ì
Croke	85	0-12		1.25-1.40		0.20-0.24		3.0-7.0	.28	.28	5	3	86
		12-21		1.35-1.55	1	0.17-0.22		0.0-0.5	.28	.28	ļ		ļ
		21-80	35-60	1.15-1.50	0.06-0.20	0.10-0.15	6.0-8.9	0.0-0.5	.28	.28	l I		1
Augsburg	13	0-9	10-27	1.20-1.40	0.60-2.00	0.20-0.23	0.0-2.9	4.0-6.0	.28	.28	5	   4L	86
i		9-33	5-18	1.30-1.50	2.00-6.00	0.20-0.23	0.0-2.9	1.0-3.0	.28	.28	i	İ	İ
		33-80	35-85	1.10-1.40	0.0000-0.20	0.10-0.14	6.0-8.9	0.0-0.5	.28	.28	ĺ	į	İ
Grano	2	   0-11	10 27	  1.30-1.60	0.60-6.00	  0.10-0.16		2.0-5.0	.24	.24	   5	   5	56
Grano	2	11-41		1.20-1.50	1	0.15-0.18		1.0-3.0	32	.32	3	5	56
		41-80		1.20-1.60		0.15-0.18		0.0-0.5	32	.32	 	! !	l I
									132	132	İ	i	İ
1923B:			ĺ		ĺ		İ		Ì	İ	ĺ	ĺ	Ì
Garnes, very stony	85	0-6		1.30-1.50	1	0.18-0.20		0.5-2.0	.32	.32	5	6	48
		6-13		1.50-1.65		0.17-0.20		0.5-1.0	.32	.32	ļ	!	ļ
		13-80	10-27	1.60-1.75	0.60-2.00	0.14-0.19	0.0-2.9	0.0-0.5	.32	.32	l I		1
Chilgren	10	0-5	5-18	1.30-1.60	2.00-6.00	0.16-0.18	0.0-2.9	1.0-3.0	.28	.28	5	   3	86
i		5-9	2-18	1.40-1.60	0.60-2.00	0.13-0.22	0.0-2.9	0.5-1.0	.28	.28	i	İ	İ
İ		9-16	18-35	1.30-1.70	0.60-2.00	0.18-0.22	3.0-5.9	0.0-0.5	.28	.28	ĺ	İ	İ
		16-80	10-27	1.30-1.75	0.60-2.00	0.14-0.19	0.0-2.9	0.0-0.5	.28	.28			
Eckvoll	3	   0-6	   5-15	  1.30-1.70	6.00-20	  0.10-0.12	0.0-2.9	1.0-3.0	1.17	1.17	   5	   2	134
	_	6-21		1.30-1.70		0.06-0.08		0.5-1.0	.15	.15	-	i -	
i		21-26	18-35	1.40-1.70	0.20-2.00	0.16-0.18	3.0-5.9	0.0-0.5	.37	.37	i	İ	İ
		26-80	16-32	1.30-1.70	0.20-2.00	0.17-0.19	3.0-5.9	0.0-0.5	.37	.37		!	
Pelan	2	   0-6	   5-20	  1 25_1 55	2.00-6.00	  0.10-0.13	0 0-2 9	0.5-3.0	.24	.24	   5	   3	86
relan	2	6-12		1.50-1.65		0.10-0.13		0.5-1.0	.20	.24	]	3	00
		12-24		1.55-1.70		0.02-0.09		0.0-0.5	.20	.20	i	i	i
j		24-60	1	1.40-1.75	1	0.14-0.18	1	0.0-0.5	.28	.28	İ	İ	İ
1004													
1984:     Leafriver	90	   0-13	 	  0.10-0.25	0.60-6.00	  0.35-0.50		50-90			   5	   2	134
realliver	90	13-80	1	1.50-1.65		0.33-0.30	1	0.5-5.0	1.17	1.17	5	2	134
i											İ	İ	İ
Cormant	5	0-6	3-10	1.30-1.50	6.00-20	0.08-0.12	0.0-2.9	2.0-10	.17	.17	5	2	134
		6-80	0-5	1.50-1.70	6.00-20	0.06-0.10	0.0-2.9	0.5-1.0	.17	.17	ļ		ļ
Markey	3	   0-42		  0.15-0.35	0.20-6.00	  0.35-0.45	 	55-85			   2	   2	134
Markey	3	42-80	1	1.40-1.65		0.03-0.08	1	0.0-0.5	.15	.15	2	-	134
			i	İ	į	İ	i			į	İ	i	İ
Redby	2	0-3	1	1.40-1.60	1	0.08-0.12	1	0.5-2.0	.17	.17	5	2	134
		3-28		1.55-1.70	1	0.07-0.10	1	0.0-0.5	.17	.17			
		28-80	0-6	1.55-1.70	6.00-20	0.06-0.08	0.0-2.9	0.0-0.5	.17	.17			

Table 24.--Physical Properties of the Soils--Continued

Table 24.--Physical Properties of the Soils--Continued

						1			Erosi	on fac	tors	Wind	Wind
Map symbol and	Percent	Depth	Clay	Moist	Permea-	Available	Linear	Organic				erodi-	erodi-
component name	of			bulk	bility	water	extensi-	matter				bility	bility
	map unit			density		capacity	bility		Kw	Kf	T	group	index
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
W:													
Water.													

Table 25.--Chemical Properties of the Soils

(Absence of an entry indicates that data were not estimated.)

Map symbol and	Percent	Depth	Cation-	Soil	Calcium	Gypsu
component name	of	-	exchange	!	carbon-	
-	map unit		capacity	  -	ate	
		In	meq/100 g	рн	Pct	Pct
17:				 		
Colvin	85	0-11	25-40	6.6-8.4	0-10	0-1
		11-41	15-25	7.4-9.0	15-40	0-1
	 	41-80	10-20	7.4-8.4	5-20 	0-5
Bearden	5	0 - 7	10-25	7.4-8.4	1-10	0
		7-32	10-25	7.4-8.4	10-20	0-2
	 	32-80	10-20	7.4-8.4	10-25	0-3
Grano	5	0-13	26-42	6.6-7.8	0-5	0
		13-54	18-36	7.4-8.4	5-25	0
		54-80	18-30	7.4-8.4	5-25	0
Sax	5	0-15	120-170	5.1-6.5	0	0
		15-24	10-58	6.1-7.3	0-5	0
		24-39	10-30	6.1-7.3	0-5	0
		39-71	5.0-30	7.4-8.4	5-20	0
	 	71-80	15-50	7.4-8.4	5-15	0
48B:	į į					
Hiwood	85	0-3	1.0-7.0	4.5-6.0	0	0
	 	3-22 22-80	1.0-6.0	5.1-6.0	0   0-15	0
	 	22-00		3.0-7.8	0-13	
Redby	7	0-3	2.0-10	5.1-6.5	0	0
		3-28	1.0-5.0	5.1-6.5	0 15	0
	 	28-80	0.0-4.0	6.1-7.8 	0-15 	0
Clearriver	3	0-2	4.0-13	5.1-6.5	0	0
		2-21	1.0-6.0	5.1-7.3	0	0
	 	21-80	1.0-3.0	6.6-7.8	1-10	0
Cormant	3	0-6	5.0-26	6.1-7.3	0	0
	į į	6-80	1.0-5.0	6.1-7.8	0-15	0
Zimmerman	   2	0-6	2.0-5.0	   5.1-6.5	   0	0
	i - i	6-80	1.0-6.0	5.1-7.3	0	0
52:				 		
Augsburg	   85	0-9	10-30	7.4-8.4	5-30	0
	j i	9-33	1.0-15	7.4-8.4	25-40	0-3
		33-80	20-50	7.4-8.4	15-30	0-3
Croke	   5	0-12	10-25	   6.6-7.8	0-10	0
	į i		5.0-15	6.6-8.4		0
	į į	21-80	20-50	7.9-8.4	10-30	0
Grano	   5	0-11	8.0-24	   6.6-7.8	0-5	0
	į i	11-41	1	7.4-8.4		
	į	41-80		7.4-8.4	5-25	0
Sago	   5	0-14	   100-190	   4.5-6.5	   0	0
3*	, J	14-80	4.0-20	5.6-8.4	0-20	0

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Cation- exchange capacity	   Soil  reaction   	  Calcium   carbon-    ate	Gypsum
		In	meq/100 g	рН	Pct	Pct
59:				 	 	
Grimstad	85	0-10	10-18	7.4-8.4	5-15	0
		10-30	2.0-12	7.4-9.0	5-20	0-3
		30-80	4.0-16	7.4-9.0	15-35	0-3
Strathcona	12	0-10	10-25	   7.4-8.4	5-15	0
		10-17	5.0-15	7.4-8.4	15-30	0
		17-28	2.0-8.0	7.4-8.4	5-15	0
		28-80	10-20	7.4-8.4	20-45	0
Foxhome	3	0-10	10-24	   6.6-7.8	0	0
		10-15	2.0-8.0	6.6-7.8	0-10	0
	ĺ	15-23	2.0-10	7.4-8.4	5-15	0
		23-80	6.0-18	7.4-8.4	15-30	0
64:				 	 	
Ulen	85	0-10	10-25	7.4-8.4	5-30	0
		10-16	0.0-10	7.9-8.4	5-30	0
		16-67	0.0-10	7.4-8.4	5-30	0
		67-80	5.0-15	7.4-8.4	5-30	0
Rosewood	10	0-11	8.0-24	7.4-8.4	5-20	0
	İ	11-19	5.0-15	7.4-8.4	15-30	0
		19-65	1.0-4.0	7.4-8.4	5-25	0
		65-80	1.0-5.0	7.4-8.4	5-25	0
Redby	3	0-3	2.0-10	   5.1-6.5	0	0
110427		3-28	1.0-5.0	5.1-6.5	0	0
	İ	28-80	0.0-4.0	6.1-7.8	0-15	0
Donah I alaa		0.0	2 0 12		0.15	0
Rushlake	2	0-8 8-80	2.0-12	6.1-7.8   7.4-8.4	0-15     5-30	0
					i i	
65:						
Foxhome	85	0-10	10-24	6.6-7.8	0	0
		10-15 15-23	2.0-8.0	6.6-7.8   7.4-8.4	0-10     5-15	0 0
		23-80	6.0-18	7.4-8.4	15-30	0
	İ		İ	İ	į į	
Strandquist	12	0 - 8	8.0-25	6.6-8.4	0-10	0
		8-35 35-80	2.0-10 7.0-16	7.4-8.4 7.4-8.4	5-15     20-40	0 0
		33-80	7.0-10	/.1-0.1 	20-40	U
Skagen	3	0-9	15-30	7.4-7.8	2-20	0
		9-19	5.0-15	7.4-8.4		0
		19-80	5.0-15	7.4-8.4	20-45	0
67:				 		
Bearden	85	0-7	10-25	7.4-8.4	1-10	0
		7-32	10-25	7.4-8.4	10-20	0-2
		32-80	10-20	7.4-8.4	10-25	0-3
Colvin	15	0-11	25-40	   6.6-8.4	0-10	0-1
		11-41	15-25	7.4-9.0	15-40	0-1
		41-80	10-20	7.4-8.4	5-20	0-5
77: Garnes	85	0 - 9	3.0-14	   6.1-7.8	   0	0
	55	9-14	10-18	6.6-7.8	0 1	0
		14-80	1	7.4-8.4		0

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Cation-  exchange  capacity		Calcium   carbon-    ate	Gypsum
		In	meq/100 g	рН	Pct	Pct
77: Chilgren	10	0-5	5.0-20	   6.1-7.3	   0	0
cmrigrem	10	5-9	2.0-20	6.1-7.3	0 1	0
	i	9-16	10-30	6.1-7.8	0-1	0
	j	16-80	5.0-25	7.4-8.4	10-30	0
Eckvoll	3	0-6	3.0-14	   6.1-7.3	   0	0
ECKVOII	3	6-21	1.0-7.0	6.1-7.3	0	0
		21-26	8.0-18	6.6-7.8	0 1	0
	i	26-80	6.0-16	7.4-8.4	10-30	0
						•
Pelan	2	0-6	3.0-16	6.1-7.3	0	0
		6-12 12-24	7.0-15 1.0-5.0	6.1-7.8 7.4-8.4	0     0-15	0
		24-60	4.0-10	7.4-8.4	15-40	0
	į		İ	İ	i i	
111:		0 10	10.00			•
Hangaard	90	0-12 12-80	10-26	6.6-7.8 7.4-8.4	0     5-15	0
		12-60	2.0-6.0	/.4-0.4 	5-15	U
Deerwood	5	0-14	90-190	5.6-7.8	0-5	0
		14-16	8.0-30	6.1-8.4	0-15	0
		16-80	1.0-10	7.4-8.4	10-20	0
Rushlake	3	0-8	2.0-12	   6.1-7.8	   0-15	0
		8-80	1.0-6.0	7.4-8.4	5-30	0
_						
Rosewood	2	0-11	8.0-24	7.4-8.4	5-20	0
		11-19 19-65	5.0-15   1.0-4.0	7.4-8.4	15-30     5-25	0
		65-80	1.0-1.0	7.4-8.4	5-25	0
	j		į		į į	
116: Redby	85 I	0-3	2.0-10	   5.1-6.5	   0	0
kemy	85	3-28	1.0-5.0	5.1-6.5	0	0
		28-80	0.0-4.0	6.1-7.8	0-15	0
	_					
Cormant	8	0-6	5.0-26	6.1-7.3	0	0
		6-80	1.0-5.0	6.1-7.8 	0-15	0
Hiwood	6	0-3	1.0-7.0	4.5-6.0	0	0
		3-22	1.0-6.0	5.1-6.0	0	0
		22-80	1.0-6.0	5.6-7.8	0-15	0
Leafriver	1	0-13	100-180	   4.5-7.3	   0	0
		13-80	1	4.5-7.3	1 1	0
	ļ					
117: Cormant	85	0-6	5.0-26	   6.1-7.3	   0	0
Colmanc	05	6-80	1.0-5.0		1 1	0
	į		į	İ	į i	
Leafriver	7		100-180		: :	0
		13-80	1.0-15	4.5-7.3	0	0
Epoufette	3	0-10	8.0-18	   6.1-7.3	0	0
		10-20	4.0-10	6.6-7.8	0-10	0

Table 25.--Chemical Properties of the Soils--Continued

component name	of map unit	Depth	1	Soil  reaction 	Calcium   carbon-    ate	Gypsum
		In	  meq/100 g	   рн	Pct	Pct
į	į			_	į į	
117:   Redby	3	0-3	2.0-10	   5.1-6.5	   0	0
Ready	5	3-28	1.0-5.0	5.1-6.5	0 1	0
į		28-80	0.0-4.0	6.1-7.8	0-15	0
Grygla, depressional-	2	0-5	2.0-28	   6.1-7.3	   0	0
	i	5-36	1.0-8.0	6.6-7.8	0	0
		36-80	4.0-14	7.4-8.4	10-35	0
 133:				 		
Dalbo	85	0-15	8.0-25	5.6-7.3	0	0
I	I	15-23	14-40	5.1-7.3	0	0
]		23-80	10-40	7.4-8.4	5-30	0
Mustinka	10	0 - 9	28-40	6.6-7.8	0	0
ļ	I	9-35	20-35	6.6-7.8	0	0
!		35-62	10-18	7.4-8.4	10-30	0
		62-80	10-18	7.4-8.4	10-30	0
Moranville	5	0 - 8	1.0-10	6.6-7.8	0-10	0
I		8-24	1.0-5.0	6.6-7.8	0-10	0
		24-42	15-35	6.6-7.8	0-15	0
		42-80	10-30	7.4-8.4	5-30	0
145:	İ		İ	İ	j j	
Enstrom	85	0-6	3.0-15	6.6-7.8	1	0
		6-29 29-80	1.0-8.0   5.0-18	6.6-8.4   7.4-8.4	0-10	0
į	į		į	İ	į į	
Grygla	10	0-6	2.0-16	6.1-7.3	0	0
		6-26 26-80	1.0-8.0	6.6-7.8   7.4-8.4	10-35	0
j	į		İ	İ	j j	
Redby	4	0-3	2.0-10	5.1-6.5	0	0
ļ		3-28 28-80	1.0-5.0	5.1-6.5	0   0-15	0
		20-00			0-13	
Pelan	1	0 - 6	3.0-16	6.1-7.3	0	0
!		6-12	7.0-15	6.1-7.8	0	0
		12-24 24-60	1.0-5.0	7.4-8.4	0-15	0
		24-00	4.0-10	7.1-0.1	13-40	
147:						
Spooner	85	0-6	4.0-19	5.6-7.8		0
· ·		15-22	1.0-11   11-21	5.6-7.8   6.1-7.8		0
İ	i	22-60	1	7.4-8.4		0
Davidatha	-	0-8				
Baudette	5	0-8 8-10	5.0-22	5.6-7.3		0
i	i	10-30	1	5.6-7.8		0
ļ		30-80	1	7.4-8.4		0
  Grygla	5	0-6	2.0-16	   6.1-7.3	   0	0
. 13		6-26		6.6-7.8	0	0
į	į	26-80		7.4-8.4	10-35	0
  Sago	5	0-14	   100-190	   4.5-6.5	   0	0
	-					

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	   Depth   	   Cation-  exchange  capacity 	   Soil  reaction   	  Calcium   carbon-    ate	Gypsum
		In	meq/100 g	pН	Pct	Pct
158B:			 	 	 	
Zimmerman	85	0-6	2.0-5.0	5.1-6.5	, 0	0
		6-80	1.0-6.0	5.1-7.3	0	0
Hiwood	6	   0-3	1.0-7.0	   4.5-6.0	0	0
	İ	3-22	1.0-6.0	5.1-6.0	0	0
		22-80	1.0-6.0	5.6-7.8	0-15	0
Two Inlets	6	   0-2	2.0-10	   6.6-7.3	   0	0
		2-4	1.0-10	6.1-6.5	0	0
		4-17	3.0-15	6.1-6.5	0	0
		17-80	0.0-3.0	6.6-7.3	0	0
Redby	3	0-3	2.0-10	5.1-6.5	0	0
	İ	3-28	1.0-5.0	5.1-6.5	0	0
		28-80	0.0-4.0	6.1-7.8	0-15	0
167B:			 	 	 	
Baudette	85	0-8	5.0-22	5.6-7.3	0	0
		8-10	4.0-24	5.6-7.3	0	0
		10-30	12-30	5.6-7.8	0-5	0
		30-80 	3.0-23	7.4-8.4	10-20   	0
Spooner	10	0-6	4.0-19	5.6-7.8	0-15	0
		6-15	1.0-11	5.6-7.8	0-15	0
		15-22   22-60	11-21	6.1-7.8 7.4-8.4	0-15     10-40	0
		22-60 	2.0-20	/.4-8.4 	10-40	0
Moranville	5	0-8	1.0-10	6.6-7.8	0-10	0
		8-24	1.0-5.0	6.6-7.8	0-10	0
		24-42 42-80	15-35 10-30	6.6-7.8 7.4-8.4	0-15     5-30	0
		42-00	10-30	7.1-0.1	3-30	Ü
187:						
Haug	90	0-10   10-16	100-180	6.6-7.8	0-5     5-30	0
		16-80	10-16	7.4-8.4	5-30	0
			į		į į	
Percy	5	0-10	13-33	6.6-8.4 7.4-8.4	0-20	0
		10-25   25-80	5.0-11	7.4-8.4	25-50	0
		İ	İ	İ	į į	
Cathro	3	0-8		4.5-7.8		0
		8-40 40-80		4.5-7.8   6.6-8.4		0
		40-00	3.0-23	0.0-0.4	3-23	Ü
Boash	2	0 - 9		6.6-7.8		0
		9-29		6.6-7.8		0
		29-80 	8.0-18	7.4-8.4	10-30	0
191:			i		i i	
Epoufette	85		8.0-18			0
				6.6-7.8		0
		∡U-6U 	1.0-5.0	/.4-8.4 	5-10   	0
Cormant	5	0-6	5.0-26	6.1-7.3	0	0
		6-80	1.0-5.0	6.1-7.8	0-15	0
Leafriver	5	   0-13	   100-180	   4.5-7.3	   0	0
	,		1.0-15			0
	İ		I		l İ	

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Cation-  exchange  capacity		Calcium   carbon-    ate	Gypsum
		In	meq/100 g	рн	Pct	Pct
191:				 		
Meehan	5	0-8	2.0-15	3.5-7.3	0	0
		8-31	1.0-8.0	3.5-6.5	0	0
		31-80	0.0-4.0	3.5-7.3	0	0
202:				 		
202: Meehan	85	0-8	2.0-15	   3.5-7.3	1 0 1	0
		8-31	1.0-8.0	3.5-6.5	0	0
		31-80	0.0-4.0	3.5-7.3	0	0
Cormant	0	0.6	5.0-26	   6.1-7.3		0
Cormant	8	0-6 6-80	1.0-5.0	6.1-7.8	0	0
					0 13	Ü
Wurtsmith	5	0-5	2.0-10	4.5-7.3	0	0
		5-45	0.0-7.0	4.5-6.5	0	0
		45-80	0.0-4.0	5.1-7.8	0	0
Leafriver	2	0-13	100-180	   4.5-7.3	1 0 1	0
	_	13-80	1.0-15	4.5-7.3	0 1	0
			į	İ	į į	
205:						
Karlstad	85	0-7 7-10	2.0-15	4.5-7.3   6.1-7.3	0	0
		10-14	1.0-15	6.1-7.8	0-15	0
		14-80	0.0-1.0	7.4-8.4	5-30	0
			į	İ	į į	
Sahkahtay	7	0 - 4	6.0-15	5.6-7.3	0	0
		4-8	2.0-8.0	5.6-7.3	0	0
		8-14 14-80	10-16	6.1-7.3 7.4-8.4	0     5-15	0
		11 00		,		Ü
Marquette	5	0 - 7	2.0-12	5.6-7.3	0	0
		7-16	3.0-12	6.6-8.4	0	0
		16-80	1.0-4.0	7.4-8.4	5-20	0
Redby	2	0-3	2.0-10	   5.1-6.5	0 1	0
•		3-28	1.0-5.0	5.1-6.5	0	0
		28-80	0.0-4.0	6.1-7.8	0-15	0
Pits, gravel	1			  -		
rics, graver	_			 		
242B:			į	İ	į į	
Marquette	85		2.0-12			0
			3.0-12	•		0
		16-80	1.0-4.0	/.4-8.4 	5-20	0
Karlstad	14	0-7	2.0-15	4.5-7.3	0	0
		7-10	2.0-15	6.1-7.3	0-15	0
			1.0-15			0
		14-80	0.0-1.0	7.4-8.4	5-30	0
Pits, gravel	1			 		
	İ		!		ļ İ	
280: Pelan	85	0.6	2 0 10			0
retam	00		3.0-16 7.0-15	6.1-7.8		0
			1.0-5.0			0
			4.0-10			0
	ĺ				ı i	

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent   of   map unit		Cation- exchange capacity	   Soil  reaction   	Calcium   carbon-   ate	Gypsum
		In	meq/100 g	рн	Pct	Pct
000						
280: Strandquist	   10	0-8	8.0-25	   6.6-8.4	0-10	0
		8-35	2.0-10	7.4-8.4	5-15	0
		35-80	7.0-16	7.4-8.4	20-40	0
Garnes	   3	0-9	3.0-14	   6.1-7.8	   0	0
	j i	9-14	10-18	6.6-7.8	0	0
		14-80	5.0-14	7.4-8.4	10-40	0
Marquette	1	0-7	2.0-12	5.6-7.3	0	0
_	i i	7-16	3.0-12	6.6-8.4	0	0
		16-80	1.0-4.0	7.4-8.4	5-20	0
Pits, gravel	1					
379:				 	 	
Percy, very cobbly	90	0-8	13-33	6.6-8.4	0-20	0
		8-23	6.0-11	7.4-8.4	25-50	0
		23-80	5.0-10	7.4-8.4	20-45	0
Boash	3	0-9	20-32	6.6-7.8	0-10	0
	į į	9-29	18-38	6.6-7.8	5-20	0
		29-80	8.0-18	7.4-8.4	10-30	0
Strandquist	3	0-8	8.0-25	6.6-8.4	0-10	0
		8-35	2.0-10	7.4-8.4	5-15	0
		35-80	7.0-16	7.4-8.4	20-40	0
Haug	2	0-10	100-180	6.6-7.8	0-5	0
5	j i	10-16	14-26	6.6-8.4	5-30	0
		16-80	10-16	7.4-8.4	5-30	0
Skagen, very cobbly	2	0-10	15-30	7.4-7.8	2-20	0
	i i	10-28	5.0-15	7.4-8.4	25-50	0
		28-80	5.0-15	7.4-8.4	20-45	0
383:				 		
Percy	90	0-10	13-33	6.6-8.4	0-20	0
		10-25	6.0-11	7.4-8.4	25-50	0
	 	25-80	5.0-10 	7.4-8.4 	20-45	0
Boash	3	0-9	20-32	6.6-7.8	0-10	0
		9-29		6.6-7.8	5-20	0
		29-80	8.0-18	7.4-8.4	10-30	0
Strandquist	3	0 - 8		6.6-8.4	0-10	0
		8-35		7.4-8.4	5-15	0
		35-80	7.0-16	7.4-8.4	20-40	0
Haug	2	0-10	100-180	6.6-7.8	0-5	0
		10-16	'	6.6-8.4	5-30	0
		16-80	10-16	7.4-8.4	5-30	0
Skagen	2	0-9	15-30	7.4-7.8	2-20	0
		9-19	'	7.4-8.4	25-50	0
		19-80	5.0-15	7.4-8.4	20-45	0

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth   		   Soil  reaction   	Calcium   carbon-   ate	Gypsum
		In	meq/100 g	рН	Pct	Pct
384:		 		 		
Percy, depressional	85	0-8	13-33	6.6-8.4	0-20	0
		8-27	10-20	7.4-8.4	25-50	0
		27-80	4.0-10	7.4-8.4	20-45	0
Haug	7	0-10	100-180	6.6-7.8	0-5	0
Ī	İ	10-16	14-26	6.6-8.4	5-30	0
		16-80	10-16	7.4-8.4	5-30	0
Percy	5	0-10	13-33	6.6-8.4	0-20	0
		10-25	6.0-11	7.4-8.4	25-50	0
		25-80	5.0-10	7.4-8.4	20-45	0
Boash	3	0-9	20-32	6.6-7.8	0-10	0
		9-29	18-38	6.6-7.8	5-20	0
		29-80	8.0-18	7.4-8.4	10-30	0
387:				 	; i	
Roliss, depressional-	85	0-8	15-28	6.6-8.4	5-10	0
		8-13 13-80	10-18   8.0-16	7.4-8.4	5-15	0-3 0-3
		13-00	0.0-10	7.1-0.1	20-33	0-5
Haug	10	0-10	100-180	6.6-7.8	1	0
		10-16	14-26	6.6-8.4	! ! ! !	0
		16-80 	10-16	7.4-8.4	5-30	0
Roliss	5	0-14	15-28	6.6-8.4	5-10	0
		14-20	10-18	7.4-8.4	:	0-1
		20-80 	8.0-16	7.4-8.4	20-35	0-1
404:			İ	İ	i i	
Chilgren	85	0-5	5.0-20	6.1-7.3	:	0
		5-9   9-16	10-30	6.1-7.3   6.1-7.8	0     0-1	0
		16-80	5.0-25	7.4-8.4	10-30	0
G	5			   6.1-7.8		0
Garnes	5	0-9   9-14	3.0-14 10-18	6.6-7.8	0 1	0
		14-80	5.0-14	7.4-8.4	10-40	0
Grygla	5	   0-6	2.0-16	   6.1-7.3	   0	0
15		6-26	1.0-8.0	6.6-7.8	0	0
		26-80	4.0-14	7.4-8.4	10-35	0
Haug	5	   0-10	100-180	   6.6-7.8	0-5	0
_		10-16	14-26	6.6-8.4	5-30	0
		16-80	10-16	7.4-8.4	5-30	0
412:		 		 		
Mavie	85	0-12	10-22	7.4-8.4	5-20	0
		12-18		7.9-8.4	15-40	0
		18-39 39-80		7.4-8.4	10-25     10-30	0 0-3
Foxhome	5	0-10		6.6-7.8	0 10	0
		10-15   15-23		6.6-7.8   7.4-8.4	0-10     5-15	0
		23-80	!	7.4-8.4	15-30	0
	İ				I i	

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Cation-  exchange  capacity	Soil  reaction 	Calcium   carbon-    ate	Gypsum
		In	meq/100 g	рн	Pct	Pct
412:     Northwood	5	0-11	100-170	   5.1-7.8		0
NOT CHWOOD	3	11-16	5.0-15	5.6-7.8	0-15	0
		16-25	1.0-10	5.6-8.4	5-30	0
İ	İ	25-80	5.0-25	7.4-8.4	5-30	0
D	-	0.0	12.22			•
Percy, very cobbly	5	0-8 8-23	13-33	6.6-8.4 7.4-8.4	0-20	0
		23-80	5.0-10	7.4-8.4	20-45	0
432: Strandquist	85	0-8	8.0-25	   6.6-8.4	0-10	0
scrandquisc	65	8-35	2.0-10	7.4-8.4	5-15	0
		35-80	7.0-16	7.4-8.4	20-40	0
	_					
Percy, very cobbly	5	0-8	13-33	6.6-8.4   7.4-8.4	0-20	0
		8-23 23-80	6.0-11	7.4-8.4	20-45	0
		25 00	3.0 10		20 13	Ü
Haug	4	0-10	100-180	6.6-7.8	0-5	0
		10-16	14-26	6.6-8.4	5-30	0
		16-80	10-16	7.4-8.4	5-30	0
Boash	3	0-9	20-32	6.6-7.8	0-10	0
	i	9-29	18-38	6.6-7.8	5-20	0
		29-80	8.0-18	7.4-8.4	10-30	0
Foxhome	   3	0-10	10-24	   6.6-7.8		0
r oxnome		10-15	2.0-8.0	6.6-7.8	0-10	0
i	i	15-23	2.0-10	7.4-8.4	5-15	0
		23-80	6.0-18	7.4-8.4	15-30	0
433:				 		
Syrene, depressional-	85	0-12	10-25	7.4-8.4	5-30	0
i	i	12-18	10-35	7.9-8.4	15-35	0
		18-80	1.0-10	7.4-8.4	10-30	0
Deerwood	5	0-14	90-190	   5.6-7.8	0-5	0
Deel wood	3	14-16	8.0-30	6.1-8.4	0-15	0
İ	i	16-80	1.0-10	7.4-8.4	10-20	0
Do normal d	-	0.11				•
Rosewood	5	0-11 11-19	8.0-24 5.0-15	7.4-8.4	5-20     15-30	0
		19-65	1.0-4.0	7.4-8.4	5-25	0
	i	65-80	1.0-5.0	7.4-8.4	5-25	0
_	_					•
Syrene	5	0-11 11-19	10-25	7.4-8.4	5-30     15-35	0
		19-80	1.0-10	7.4-8.4	10-30	0
j			İ	İ	į į	
435:	0.5	0.11	10.05			•
Syrene	85	0-11 11-19	10-25	7.4-8.4	5-30     15-35	0
		19-80	1.0-10	7.4-8.4	10-30	0
į	İ		İ	İ	į į	
Rosewood	5	0-11	•	7.4-8.4	5-20	0
		11-19 19-65	5.0-15	7.4-8.4	15-30     5-25	0
		65-80	1.0-4.0	7.4-8.4	5-25	0
				i		•

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	_	Cation-  exchange  capacity		Calcium   carbon-    ate	Gypsum
		In	  meq/100 g	   рн	Pct	Pct
			meq/100 g	1		100
435:						
Syrene, depressional-	5	0-12	10-25	7.4-8.4	5-30	0
		12-18 18-80	10-35   1.0-10	7.9-8.4	15-35     10-30	0
		10-00	1.0-10	7.1-0.1	10-30	Ū
Karlsruhe	3	0 - 8	11-22	6.6-8.4	5-30	0
		8-16	7.0-14	6.6-8.4	15-30	0
		16-80	0.0-3.0	7.4-8.4	10-25	0
Deerwood	2	0-14	90-190	   5.6-7.8	0-5	0
	i	14-16	8.0-30	6.1-8.4	0-15	0
		16-80	1.0-10	7.4-8.4	10-20	0
439:				 		
Strathcona	85	0-10	10-25	   7.4-8.4	5-15	0
		10-17	5.0-15	7.4-8.4	15-30	0
	İ	17-28	2.0-8.0	7.4-8.4	5-15	0
		28-80	10-20	7.4-8.4	20-45	0
Northwood	5	0-11	   100-170	   5.1-7.8	   0	0
		11-16	5.0-15	5.6-7.8	0-15	0
	i i	16-25	1.0-10	5.6-8.4	5-30	0
		25-80	5.0-25	7.4-8.4	5-30	0
Percy	5	0-10	13-33	   6.6-8.4	0-20	0
reicy		10-25	6.0-11	7.4-8.4	25-50	0
		25-80	5.0-10	7.4-8.4	20-45	0
Grimstad	3	0-10	10.10	   7.4-8.4	   5-15	0
Grimstad	] 3   	10-30	10-18   2.0-12	7.4-8.4	5-15	0-3
		30-80	4.0-16	7.4-9.0	15-35	0-3
	İ		İ	ĺ	į į	
Strandquist	2	0 - 8	8.0-25	6.6-8.4	!	0
		8-35 35-80	2.0-10   7.0-16	7.4-8.4 7.4-8.4	5-15     20-40	0
		33-60	7.0-16	/.4-0.4 	20-40	U
481:					i i	
Kratka	85	0 - 8	6.0-20	5.6-7.8	0-15	0
		8-22	1.0-8.0	5.6-7.8	0-15	0
		22-80	4.0-21	6.1-8.4	0-30	0
Northwood	5	0-11	100-170	5.1-7.8	0	0
		11-16	5.0-15	5.6-7.8	0-15	0
		16-25	1.0-10	5.6-8.4	5-30	0
		25-80	5.0-25	7.4-8.4	5-30	0
Percy	5	0-10	13-33	6.6-8.4	0-20	0
-	i	10-25	6.0-11	7.4-8.4	25-50	0
		25-80	5.0-10	7.4-8.4	20-45	0
Enstrom	3	0-6	   3.0-15	   6.6-7.8	   0	0
		6-29	1.0-8.0	6.6-8.4	0-10	0
	i	29-80	5.0-18	7.4-8.4	10-40	
Strandquist	2	0-8 8-35	8.0-25 2.0-10	6.6-8.4   7.4-8.4		0
		35-80	7.0-16	7.4-8.4	20-40	0

Table 25.--Chemical Properties of the Soils--Continued

map unit     capacity   ate	Map symbol and component name	Percent of	Depth	   Cation-  exchange	Soil reaction	  Calcium   carbon-	Gypsum
482: Grygla						: :	
Grygla			In	meq/100 g	рн	Pct	Pct
Grygla	402.				 		
6-26   1.0-8.0   6.6-7.8   0   26-80   4.0-14   7.4-8.4   10-35		85	0-6	2.0-16	   6.1-7.3	0 1	0
Chilgren	01/910				1	! !	0
5-9			26-80	4.0-14	7.4-8.4	10-35	0
9-16   10-30   6.1-7.8   0-1   16-80   5.0-25   7.4-8.4   10-30	Chilgren	5	0-5	5.0-20	   6.1-7.3	0	0
16-80   5.0-25   7.4-8.4   10-30			5-9	2.0-20	6.1-7.3	0	0
Grygla, depressional 5					1	! !	0
S-36			16-80	5.0-25 	7.4-8.4 	10-30	0
Enstrom	Grygla, depressional-	5	0-5	2.0-28	6.1-7.3	0	0
Enstrom			5-36	1.0-8.0	6.6-7.8	0	0
			36-80	4.0-14	7.4-8.4	10-35	0
Northwood	Enstrom	3	0-6	3.0-15	6.6-7.8	0	0
Northwood	İ	İ	6-29	1.0-8.0	6.6-8.4	0-10	0
11-16   5.0-15   5.6-7.8   0-15   16-25   1.0-10   5.6-8.4   5-30   25-80   5.0-25   7.4-8.4   5-30   25-80   5.0-25   7.4-8.4   5-30   25-80   5.0-25   7.4-8.4   5-30   25-80   5.0-25   7.4-8.4   5-30   25-80   5.0-25   7.4-8.4   5-30   25-80   4.0-20   5.6-8.4   0-20   25-6-8.4   0-20   25-6-8.4   0-20   25-6-8.4   0-20   25-6-8.4   0-20   25-6-8.4   0-20   25-6-8.4   25-25   25-6-8.4   25-25   25-6-8.4   25-25   25-6-8.4   25-25   25-6-8.4   25-25   25-6-8.4   25-25   25-6-8.4   25-25   25-6-8.4   25-25   25-6-8.4   25-25   25-6-8.4   25-25   25-6-8.4   25-6-8.			29-80	5.0-18	7.4-8.4	10-40	
16-25   1.0-10   5.6-8.4   5-30   25-80   5.0-25   7.4-8.4   5-30	Northwood	2	0-11	100-170	5.1-7.8	0	0
532: Sago	İ	İ	11-16	5.0-15	5.6-7.8	0-15	0
532: Sago			16-25	1	'	5-30	0
Sago			25-80	5.0-25	7.4-8.4	5-30	0
Cathro	532:					i i	
Cathro	Sago	90	0-14	100-190	4.5-6.5	0	0
8-40   120-170   4.5-7.8   0   40-80   5.0-25   6.6-8.4   5-25			14-80	4.0-20	5.6-8.4	0-20	0
40-80   5.0-25   6.6-8.4   5-25	Cathro	5	0-8	120-170	4.5-7.8	0	0
Zippel	İ	İ	8-40	120-170	4.5-7.8	0	0
10-16   3.0-15   6.6-7.8   0-15   16-80   3.0-15   7.4-8.4   5-30     534:			40-80	5.0-25	6.6-8.4	5-25	0
16-80   3.0-15   7.4-8.4   5-30	Zippel	5	0-10	5.0-30	6.6-7.8	0-5	0
534:  Mooselake			10-16	3.0-15	6.6-7.8	0-15	0
Mooselake			16-80	3.0-15	7.4-8.4	5-30	0
Bullwinkle	534:					i i	
Bullwinkle	Mooselake	90	0-16	1		0	0
16-48   120-170   5.6-7.3   0			16-80	140-180	4.5-7.3	0	0
	Bullwinkle	4	0-16	120-170	5.6-7.3	0	0
Dora				120-170		0	0
Tawas			48-80	10-20	6.6-8.4	0-30	0
Tawas	Dora	3	0-8	40-180	4.5-7.8	0	0
Tawas 3   0-10   80-120   4.5-7.8   0-5			8-26	40-180	'		0
10-27   80-120   4.5-7.8   0-5			26-80	18-31	6.1-8.4	0-20	0
27-80   1.0-6.0   5.6-8.4   0-30	Tawas	3	0-10	80-120	4.5-7.8	0-5	0
540:			10-27	'	1		0
			27-80	1.0-6.0	5.6-8.4	0-30	0
Seelyeville 90   0-12   140-200   4.5-7.3   0						į į	
	Seelyeville	90		'	'	: :	0
12-80   140-200   4.5-7.3   0			12-80	140-200 	<b>4.5-7.3</b> 	0   	0
Cathro 4   0-8   120-170   4.5-7.8   0	Cathro	4	0 - 8	120-170	4.5-7.8	0	0
8-40   120-170   4.5-7.8   0					1	: :	0
40-80   5.0-25   6.6-8.4   5-25			40-80	5.0-25	6.6-8.4	5-25	0

Table 25.--Chemical Properties of the Soils--Continued

	1		1	1		
Management 2 2 2 2		D 1			 	
Map symbol and	Percent	Depth	Cation-	Soil	Calcium	Gypsum
component name	of		exchange		carbon-	
	map unit		capacity		ate	
		l In	  meg/100 g	   рН	Pct	Pct
						100
540:			[			
Dora	3	0-5	40-180	4.5-7.8	0	0
		5-31	40-180	4.5-7.8	0	0
		31-80	18-31	6.1-8.4	0-20	0
Markey	3	   0-42	   110-170	   4.5-7.8	   0-5	0
Marney		42-80	1.0-3.0	5.6-8.4	0-5	0
		İ	İ	İ	į į	
541:			150 100			•
Rifle	90	0-8	150-180	4.5-7.3	0	0
		8-80	50-150	4.5-7.3	0	0
Tacoosh	10	0-17	150-200	5.6-7.8		0
		17-33	150-200	5.6-7.8	i o i	0
		33-80	10-30	6.6-8.4	0-30	0
543: Markey	   90	   0-42	   110-170	   4.5-7.8	   0-5	0
markey	] 30	42-80	1.0-3.0	5.6-8.4	0-5	0
		42-80 	1.0-3.0	5.6-8.4	0-5	U
Cormant	5	0-6	5.0-26	6.1-7.3	0	0
		6-80	1.0-5.0	6.1-7.8	0-15	0
				<u> </u>		
Seelyeville	5	0-12   12-80	140-200	4.5-7.3	- !	0
		12-80 	140-200	4.5-7.3	0	0
544:		!			i i	
Cathro	90	0-8	120-170	4.5-7.8	0	0
		8-40	120-170	4.5-7.8	0	0
		40-80	5.0-25	6.6-8.4	5-25	0
Dawes same askiles	4		12.22	   6.6-8.4		0
Percy, very cobbly	4	0-8	13-33	1		0
		8-23	6.0-11	7.4-8.4	25-50	0
		23-80	5.0-10	7.4-8.4	20-45	0
Grygla	3	0-6	2.0-16	6.1-7.3	0	0
		6-26	1.0-8.0	6.6-7.8	0	0
		26-80	4.0-14	7.4-8.4	10-35	0
G1		0.10	140 200	   4.5-7.3		0
Seelyeville	3	0-12   12-80	140-200	4.5-7.3	0     0	0
		12-60	140-200	4.5-7.5	0	U
546:			İ	İ	i i	
Lupton	90	0-16	100-200	4.5-7.8	0	0
		16-80	100-200	4.5-7.8	0	0
Bullwinkle	4	   0-16	   120-170	   5.6-7.3	   0	0
Bullwillkie	] <del>-</del>	16-48	120-170	5.6-7.3	0	0
		48-80	10-20	6.6-8.4	0-30	0
			İ		į i	
Dora	3	0-8	40-180	4.5-7.8	0	0
		8-26	40-180	4.5-7.8	0	0
		26-80	18-31	6.1-8.4	0-20	0
Tawas	3	   0-10	80-120	   4.5-7.8	   0-5	0
		10-27	80-120	4.5-7.8	0-5	0
		27-80	1.0-6.0	5.6-8.4	0-30	0
		İ	İ	İ	i i	

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Cation-  exchange  capacity	Soil  reaction 	Calcium   carbon-    ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
	į				į į	
547: Deerwood	90	0-14	90-190	   5.6-7.8	   0-5	0
2001 #000	90	14-16	8.0-30	6.1-8.4	0-15	0
	i	16-80	1.0-10	7.4-8.4	10-20	0
Markey	4	0-42	   110-170	   4.5-7.8	   0-5	0
Markey	I	42-80	1.0-3.0	5.6-8.4	0-5	0
Rosewood	3	0.11				0
kosewood	3	0-11 11-19	8.0-24	7.4-8.4	5-20     15-30	0
		19-65	1.0-4.0	7.4-8.4	5-25	0
		65-80	1.0-1.0	7.4-8.4	5-25	0
_						
Syrene	3	0-11 11-19	10-25 10-35	7.4-8.4	5-30     15-35	0
		19-80	1.0-10	7.4-8.4	10-30	0
550:						
Dora	90 l	0-5	40-180	   4.5-7.8	0	0
2014	]	5-31	40-180	4.5-7.8	0 1	0
	į	31-80	18-31	6.1-8.4	0-20	0
Boash	4	0-9	20-32	   6.6-7.8	   0-10	0
	- 1	9-29	18-38	6.6-7.8	5-20	0
	į	29-80	8.0-18	7.4-8.4	10-30	0
Seelyeville	3	0-12	140-200	   4.5-7.3	   0	0
		12-80	140-200	4.5-7.3	0	0
Woodslake	3	0-8	35-55	   6.6-7.8	   0	0
	-	8-15	42-62	6.6-8.4	0	0
	į	15-36	40-60	7.4-8.4	5-30	0
	į	36-80	18-36	7.4-8.4	5-30	0
561:				 		
Bullwinkle	90	0-16	120-170	5.6-7.3	0	0
		16-48	120-170	5.6-7.3	0	0
		48-80	10-20	6.6-8.4	0-30	0
Lupton	4	0-16	100-200	4.5-7.8	0	0
		16-80	100-200	4.5-7.8	0	0
Northwood, wooded	4	0-15	100-170	   5.1-7.8	0	0
j	ĺ	15-21	5.0-15	5.6-7.8	0-15	0
	I	21-39	1.0-10	5.6-8.4	5-30	0
		39-80	5.0-25	7.4-8.4	5-30	0
Chilgren	2	0-5	5.0-20	6.1-7.3	0	0
	I	5-9	2.0-20	6.1-7.3	0	0
		9-16	10-30	6.1-7.8	0-1	0
		16-80	5.0-25	7.4-8.4 	10-30   	0
563:			į	<u> </u>	į į	ē
Northwood	90	0-11	100-170	5.1-7.8	0	0
		11-16	5.0-15	5.6-7.8	0-15	0
		16-25 25-80	1.0-10   5.0-25	7.4-8.4	5-30   5-30	0
	!	23-00	3.0-23	1 7.1-0.4	3-30	5

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Cation-  exchange  capacity	Soil  reaction 	Calcium   carbon-    ate	Gypsum
		In	meq/100 g	рН	Pct	Pct
563:			1	 		
Grygla	4	0 - 6	2.0-16	6.1-7.3	0	0
		6-26	1.0-8.0	6.6-7.8	0	0
		26-80	4.0-14	7.4-8.4	10-35	0
Berner	3	0-23	115-160	5.6-7.3	0 1	0
		23-41	2.0-8.0	6.1-7.8	0-5	0
		41-80	10-20	7.4-8.4	15-35	0
Strandquist	   3	0-8	8.0-25	   6.6-8.4	0-10	0
20141144120		8-35	2.0-10	7.4-8.4	5-15	0
	İ	35-80	7.0-16	7.4-8.4	20-40	0
565:						
Eckvoll	85	0 - 6	3.0-14	6.1-7.3	0	0
	İ	6-21	1.0-7.0	6.1-7.3	0	0
		21-26	8.0-18	6.6-7.8	0	0
		26-80	6.0-16	7.4-8.4	10-30	0
Chilgren	5	0 - 5	5.0-20	6.1-7.3	0	0
		5 - 9	2.0-20	6.1-7.3	0	0
		9-16	10-30	6.1-7.8	0-1	0
		16-80	5.0-25	7.4-8.4	10-30	0
Grygla	5	0 - 6	2.0-16	6.1-7.3	0	0
		6-26	1.0-8.0	6.6-7.8	0	0
		26-80	4.0-14	7.4-8.4	10-35	0
Hiwood	5	0-3	1.0-7.0	4.5-6.0	0	0
İ	İ	3-22	1.0-6.0	5.1-6.0	0	0
		22-80	1.0-6.0	5.6-7.8	0-15	0
568:						
Zippel	85	0-10	5.0-30	6.6-7.8	0-5	0
		10-16	3.0-15	6.6-7.8	0-15	0
		16-80	3.0-15	7.4-8.4	5-30	0
Augsburg,				 		
depressional	5	0 - 9	10-30	7.4-8.4	5-30	0
		9-16	1.0-15	7.4-8.4	25-40	0-3
		16-32 32-80	1.0-15	7.4-8.4	30-35	0-3 0-3
		32-80	20-50	/.4-0.4 	10-30	0-3
Sago	5	0-14	100-190	4.5-6.5	0	0
		14-80	4.0-20	5.6-8.4	0-20	0
Skime	5	0 - 6	5.0-10	   6.1-7.3	0-5	0
j	İ	6-17		6.1-7.3		0
		17-22	5.0-15	6.1-7.3	0-5	0
		22-72		6.6-8.4	0-10	0
		72-80	1.0-15	6.6-8.4	5-15	0
569:			İ		i i	
Wabanica	85	0-8	15-25	6.6-7.8		0
		8-19		6.6-7.8		0
		19-80	10-30	7.4-8.4	10-30	0
Warroad	6	0-11	1	6.6-7.8		0
		11-26		7.4-7.8		0
		26-80	10-30	7.4-8.4	5-30	0

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent   of   map unit	Depth	Cation-  exchange  capacity	Soil reaction	Calcium  carbon-   ate	Gypsum
		In	meq/100 g	рН	Pct	Pct
ECO.						
569: Sax	   4	0-15	120-170	5.1-6.5	0	0
		15-24	10-58	6.1-7.3	0-5	0
	j j	24-39	10-30	6.1-7.3	0-5	0
		39-71	5.0-30	7.4-8.4	5-20	0
		71-80	15-50	7.4-8.4	5-15	0
Grano	3	0-11	8.0-24	6.6-7.8	0-5	0
	į į	11-41	18-36	7.4-8.4	5-25	0
		41-80	18-30	7.4-8.4	5-25	0
Enstrom	   2	0-6	3.0-15	6.6-7.8	0	0
		6-29	1.0-8.0	6.6-8.4	0-10	0
		29-80	5.0-18	7.4-8.4	10-40	
570:						
Faunce	   85	0-2	2.0-10	5.1-6.5	0	0
	i i	2-14	2.0-10	5.1-6.5	0	0
	i i	14-24	2.0-10	5.1-7.3	0	0
		24-80	0.0-5.0	6.6-7.8	0-5	0
Clearriver	   7	0-2	4.0-13	5.1-6.5	0	0
	i i	2-21	1.0-6.0	5.1-7.3	0	0
		21-80	1.0-3.0	6.6-7.8	1-10	0
Zimmerman	   4	0-6	2.0-5.0	   5.1-6.5		0
2 Indie Indii	4	6-80	1.0-6.0	5.1-7.3	0	0
Meehan	3	0-8 8-31	2.0-15	3.5-7.3	0	0
		31-80	0.0-4.0	3.5-6.5	0	0
			į	į	į į	
Pits, gravel	1			 		
581:						
Percy	90	0-11	13-28	6.6-8.4	0-20	0
		11-15	6.0-11	7.4-8.4	25-45	0
		15-60	5.0-10	7.4-8.4	20-40	0
Haug	5	0-10	100-180	6.6-7.8	0-5	0
		10-16	14-26	6.6-8.4	5-30	0
		16-80	10-16	7.4-8.4	5-30	0
Boash	3	0-9	20-32	6.6-7.8	0-10	0
	į į	9-29	18-38	6.6-7.8	5-20	0
		29-80	8.0-18	7.4-8.4	10-30	0
Skagen	   2	0-9	15-30	7.4-7.8	2-20	0
	i	9-19	5.0-15	7.4-8.4	25-50	0
		19-80	5.0-15	7.4-8.4	20-45	0
582:				 		
Roliss	85	0-14	15-28	6.6-8.4	5-10	0
	l İ	14-20	10-18	7.4-8.4	5-15	0-1
		20-80	8.0-16	7.4-8.4	20-35	0-1
Roliss, depressional-	   7	0-8	15-28	6.6-8.4	   5-10	0
, <u>F</u>		8-13	10-18	7.4-8.4	5-15	0-3
	İ	13-80	8.0-16	7.4-8.4	20-35	0-3
	l İ				l	

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Cation-  exchange  capacity	Soil  reaction 	Calcium  carbon-   ate	
		In	meq/100 g	рН	Pct	Pct
582: Boash	   5	0-9	20-32	6.6-7.8	0-10	0
Boubii		9-29	18-38	6.6-7.8	5-20	0
	į į	29-80	8.0-18	7.4-8.4	10-30	0
Haug	3	0-10 10-16	100-180 14-26	6.6-7.8	0-5	0
		16-80	10-16	7.4-8.4	5-30	0
	İ		į	İ	j i	
583:			[			
Nereson	85	0-7	10-14	6.1-7.3	0	0
		7-11 11-29	5.0-13 3.0-12	6.6-7.8	0-5 15-30	0
		29-80	3.0-12	7.4-8.4	10-30	0
	i i		İ	İ	i i	
Percy	10	0-10	13-33	6.6-8.4	0-20	0
		10-25	6.0-11	7.4-8.4	25-50	0
		25-80	5.0-10	7.4-8.4	20-45	0
Pelan	3	0 - 6	3.0-16	6.1-7.3	0	0
	j i	6-12	7.0-15	6.1-7.8	0	0
		12-24	1.0-5.0	7.4-8.4	0-15	0
		24-60	4.0-10	7.4-8.4	15-40	0
Foxhome	   2	0-10	10-24	6.6-7.8	   0	0
	- 1	10-15	2.0-8.0	6.6-7.8	0-10	0
	i i	15-23	2.0-10	7.4-8.4	5-15	0
		23-80	6.0-18	7.4-8.4	15-30	0
627:				 		
Tawas	   90	0-10	80-120	4.5-7.8	0-5	0
		10-27	80-120	4.5-7.8	0-5	0
		27-80	1.0-6.0	5.6-8.4	0-30	0
T C		0 10	100 100			
Leafriver	4	0-10 10-13	100-180   10-50	4.5-7.3	0   0	0
		13-80	1.0-15	4.5-7.3	0	0
	į į		İ	j	į i	
Lupton	4	0-16	100-200	4.5-7.8	0	0
		16-80	100-200	4.5-7.8	0	0
Cormant	   2	0-6	5.0-26	6.1-7.3	   0	0
	_	6-80	!			0
630:		0 10	140 000			
Wildwood	90	0-12 12-33	140-200   30-60	5.1-6.5	0   0	0
		33-80	30-60	7.4-8.4	5-30	0
	į į		į	į	į i	
Boash	4	0 - 9	20-32	6.6-7.8	0-10	0
		9-29	18-38   8.0-18	6.6-7.8	5-20 10-30	0
		29-80	0.0-18	/.4-8.4 	±0-30	0
Dora	4	0 - 5	40-180	4.5-7.8	0	0
	l İ	5-31	40-180	4.5-7.8	0	0
		31-80	18-31	6.1-8.4	0-20	0
T12.	   2	0-10	8.0-18	   6.6-7.3		0
	. 4	0-10	0.U-18	0.0-/.3	0	U
Espelie	_	10-27	2.0-8.0	6.6-7.8	0-15	0

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Cation-  exchange  capacity	Soil  reaction 	Calcium   carbon-    ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
			İ	ĺ	į į	
643: Huot	   85	0-14	5.0-20	   7.4-8.4	5-30	0
11400	05	14-26	5.0-25	7.4-8.4	5-35	0
	i	26-34	2.0-20	7.4-8.4	5-30	0
		34-80	20-75	7.4-8.4	5-30	0
Thiefriver	   12	0-10	8.0-17	   7.4-8.4	   5-15	0
Thieffiver	12	10-16	4.0-11	7.4-8.4	10-25	0
		16-35	1.0-6.0	7.4-8.4	5-10	0
	i	35-80	24-50	7.4-8.4	5-15	0
						_
Redby	3	0-3	2.0-10	5.1-6.5	0	0
		3-28 28-80	1.0-5.0	6.1-7.8	0   0-15	0
		20 00				ŭ
644:	İ		İ	ĺ	į į	
Boash	85	0-9	20-32	6.6-7.8	0-10	0
		9-29 29-80	18-38   8.0-18	6.6-7.8   7.4-8.4	5-20     10-30	0
		29-80	0.0-10	/.4-0.4 	10-30	U
Percy	7	0-10	13-33	6.6-8.4	0-20	0
		10-25	6.0-11	7.4-8.4	25-50	0
		25-80	5.0-10	7.4-8.4	20-45	0
Woodslake	5	0-8	35-55	   6.6-7.8	   0	0
WOOdstake		8-15	42-62	6.6-8.4	0 1	0
	i	15-36	40-60	7.4-8.4	5-30	0
		36-80	18-36	7.4-8.4	5-30	0
Strandquist	   3	0-8	8.0-25	   6.6-8.4	0-10	0
strandquist	, s	8-35	2.0-10	7.4-8.4	5-15	0
		35-80	7.0-16	7.4-8.4	20-40	0
645:	   85	0.10	0 0 10			0
Espelie	85	0-10 10-27	8.0-18	6.6-7.3	0   0-15	0
		27-80	16-30	7.4-8.4	10-30	0-3
	i		j	j	j j	
Grano	5	0-11	8.0-24	6.6-7.8	0-5	0
		11-41	18-36	7.4-8.4	5-25	0
		41-80	18-30	7.4-8.4	5-25	0
Hilaire	5	0-13	8.0-18	6.6-7.3	0-10	0
	i	13-33	•	6.6-7.8	: :	0
		33-80	16-30	7.4-8.4	10-30	0
Wildwood	5	0.10	140 200			0
wilawood	) <b>5</b>	12-33	140-200   30-60	5.1-6.5		0
		33-80	30-60	7.4-8.4		0
	İ		İ	İ	į į	
651:	0.5	0.75				•
Thiefriver	85		8.0-17 4.0-11	7.4-8.4		0
		16-35	:	7.4-8.4	5-10	0
		35-80	•	7.4-8.4		0
	İ		İ	İ	į į	
Grano	5		8.0-24	6.6-7.8	0-5	0
		11-41	:	7.4-8.4	5-25	0
		41-80	18-30	7.4-8.4	5-25	0

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent   of   map unit	-	   Cation-  exchange  capacity 		  Calcium   carbon-    ate	Gypsum
		In	meq/100 g	рн	Pct	Pct
651: Huot	5	0-14		     7.4-8.4		0
		14-26 26-34 34-80		7.4-8.4 7.4-8.4 7.4-8.4	5-30	0 0 0
Wildwood	5	0-12 12-33 33-80	140-200 30-60 30-60	5.1-6.5   5.6-7.3   7.4-8.4		0 0 0
708:				 		
Rushlake	85	0-8 8-80	2.0-12	6.1-7.8	0-15	0
Corliss	6	0-8 8-80	3.0-12	6.1-7.8 6.1-7.8	0-15     0-15	0
Redby	5	0-3 3-28	2.0-10   1.0-5.0	   5.1-6.5   5.1-6.5	j o j	0
Hangaard	3	0-12	0.0-4.0     10-26   2.0-6.0	6.6-7.8	   0	0
Pits, gravel	1	12-80	2.0-6.0	7.4-8.4   	5-15   	0
712:				 	 	
Rosewood	85	0-11 11-19 19-65	8.0-24 5.0-15 1.0-4.0	7.4-8.4 7.4-8.4 7.4-8.4	15-30	0 0 0
		65-80	1.0-5.0	7.4-8.4		0
Deerwood	6	0-14 14-16 16-80	90-190 8.0-30 1.0-10	5.6-7.8 6.1-8.4 7.4-8.4		0 0 0
Hangaard	5	0-12 12-80	   10-26   2.0-6.0	   6.6-7.8   7.4-8.4	0     5-15	0 0
Ulen	<b>4</b>	0-10 10-16 16-67 67-80	10-25   0.0-10   0.0-10   5.0-15	   7.4-8.4   7.9-8.4   7.4-8.4	5-30   5-30	0 0 0
	i					
721B: Corliss	85   		3.0-12   0.0-4.0			0 0
Rushlake	10		2.0-12   1.0-6.0			0
Hangaard	4		   10-26   2.0-6.0			0 0
Pits, gravel	1		 	   	     	
733: Berner	90   		   115-160   2.0-8.0   10-20		0-5	0 0 0

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit		Cation- exchange capacity	   Soil  reaction 	  Calcium  carbon-    ate	Gypsum
	<u> </u>	In	  meq/100 g	pH	Pct	Pct
			į		į į	
733:	   5	   0-6	2.0-16	   6.1-7.3	   0	0
Grygla	] 3	0-6   6-26	1.0-8.0	6.6-7.8	0     0	0
		26-80	4.0-14	7.4-8.4	10-35	0
			İ			
Seelyeville	5	0-12	140-200	4.5-7.3	0	0
		12-80	140-200	4.5-7.3	0	0
737: Mahkonce	l   85	   0-3	10-25	   5.6-7.3	   0	0
Mankonce	65	3-5	10-25	5.6-7.3	0     0	0
		5-16	25-30	6.1-7.3		0
		16-23	10-20	6.1-7.8		0
		23-80	10-20	7.4-8.4	15-30	0
			İ	ĺ	į į	
Auganaush	10	0-5	15-30	5.6-7.3	0	0
		5-7	5.0-15	5.6-7.3	0	0
		7-18	15-30	5.6-7.3	0	0
		18-58	15-25	7.4-8.4	!	0
		58-80 	10-30	7.4-8.4	15-30	0
Eckvoll	l   5	   0-6	3.0-14	6.1-7.3		0
		6-21	1.0-7.0	6.1-7.3	0	0
		21-26	8.0-18	6.6-7.8	i o i	0
	İ	26-80	6.0-16	7.4-8.4	10-30	0
			1			
755:						•
Woodslake	85	0-8	35-55	6.6-7.8 6.6-8.4	0     0	0
	l	8-15   15-36	42-62	7.4-8.4		0
		36-80	18-36	7.4-8.4		0
						-
Boash	8	0-9	20-32	6.6-7.8	0-10	0
		9-29	18-38	6.6-7.8	5-20	0
		29-80	8.0-18	7.4-8.4	10-30	0
Wildwood	   5	   0-12	140-200	   5.1-6.5	   0	0
WIIGWOOG	] 3	12-33	30-60	5.6-7.3	0     0	0
		33-80	30-60	7.4-8.4		0
	İ		İ	İ	i i	
Dora	2	0-5	40-180	4.5-7.8	0	0
		5-31	1	4.5-7.8	0	0
		31-80	18-31	6.1-8.4	0-20	0
767:			1			
Auganaush	90	   0-5	15-30	5.6-7.3		0
		5-7	5.0-15	5.6-7.3	0 1	0
		7-18	15-30	5.6-7.3	0	0
	İ	18-58	15-25	7.4-8.4	15-30	0
		58-80	10-30	7.4-8.4	15-30	0
Mustinka	5	0-9	28-40	6.6-7.8	0	0
		9-35	20-35	6.6-7.8 7.4-8.4	0	0
		35-62 62-80	10-18   10-18	7.4-8.4		0
		02-00 	10-10	/.=-0.4 	10-30   	J
Wildwood	3	0-12	140-200	5.1-6.5	0	0
		12-33	30-60	5.6-7.3	0	0
		33-80	30-60	7.4-8.4	5-30	0

Table 25.--Chemical Properties of the Soils--Continued

In	Map symbol and component name	Percent of map unit	Depth	Cation-  exchange  capacity	Soil  reaction 	Calcium  carbon-   ate	Gypsum
767:  Mahkonce			In	  meg/100 g	Hg	Pct	Pct
Mahkonce	j				į	į	
3-5		2	0.3	10.25			   0
	mankonce	2			1		l 0
16-23   10-20   6.1-7.8   5-15   23-80   10-20   7.4-8.4   15-30					1		0
794: Clearriver	i		16-23	10-20	1	5-15	0
Clearriver			23-80	10-20	7.4-8.4	15-30	0
Clearriver	794 •				 		
Hiwood		85	0-2	4.0-13	5.1-6.5	0	0
Hiwood	i		2-21	1.0-6.0	5.1-7.3	0	0
3-22   1.0-6.0   5.1-6.0   0			21-80	1.0-3.0	6.6-7.8	1-10	0
3-22   1.0-6.0   5.1-6.0   0	Hiwood	7	0-3	1.0-7.0	   4.5-6.0	   0	   0
Meehan	1111000	,		!	1		0
R-31   1.0-8.0   3.5-6.5   0   31-80   0.0-4.0   3.5-7.3   0	j		22-80		1	0-15	0
R-31   1.0-8.0   3.5-6.5   0   31-80   0.0-4.0   3.5-7.3   0	Mr. A	-					
Faunce	meenan	5		!	1		0   0
Faunce				1			0
14-24   2.0-10   5.1-7.3   0   24-80   0.0-5.0   6.6-7.8   0-5	Faunce	3	0-2	1	1	0	0
24-80   0.0-5.0   6.6-7.8   0-5					1		0
The second color of the				1	1		0
Fluvaquents, frequently flooded 90 0-12 10-35 5.6-7.8 0-15 12-80 5.0-30 5.6-7.8 0-15  Seelyeville 6 0-18 140-200 4.5-7.3 0 18-80 140-200 4.5-7.3 0  Hapludalfs 2 0-6 10-20 6.1-7.8 0-1 8-25 15-30 6.6-7.8 0-1 8-25 15-30 6.6-7.8 0-1 25-80 5.0-25 7.4-8.4 5-30  Water 2 1030: Pits, gravel 75			24-80	0.0-5.0	6.6-7.8	0-5	0 
frequently flooded 90	1002:			İ	İ	į	
12-80   5.0-30   5.6-7.8   0-15	-						
Seelyeville	frequently flooded	90			1		0
18-80   140-200   4.5-7.3   0			12-80	5.0-30	5.6-7.8	0-12	0 
Hapludalfs	Seelyeville	6	0-18	140-200	4.5-7.3	0	0
6-8   5.0-15   6.1-7.8   0-1   8-25   15-30   6.6-7.8   0-1   25-80   5.0-25   7.4-8.4   5-30			18-80	140-200	4.5-7.3	0	0
6-8   5.0-15   6.1-7.8   0-1   8-25   15-30   6.6-7.8   0-1   25-80   5.0-25   7.4-8.4   5-30	Hanludalfg	2	0-6	10-20	   61_78	0-1	   0
8-25   15-30   6.6-7.8   0-1   25-80   5.0-25   7.4-8.4   5-30	napiudalis	_			1		0
Water	i		8-25		1	0-1	0
1030: Pits, gravel			25-80	5.0-25	7.4-8.4	5-30	0
1030: Pits, gravel	Water	2			 		
Pits, gravel	water	2			 		
Udipsamments	1030:			į	İ	į	
14-60   1.0-3.0   6.6-7.3   0   60-80   1.0-3.0   7.4-8.4   0-5	Pits, gravel	75					
14-60   1.0-3.0   6.6-7.3   0   60-80   1.0-3.0   7.4-8.4   0-5	IIdinsamments	20	0-14	1 0-5 0	   6 6-7 3	1 0	   0
	ourpoundier es	20				:	0
8-80   0.0-4.0   6.1-7.8   0-15	j						0
8-80   0.0-4.0   6.1-7.8   0-15							
Karlstad 2   0-7   2.0-15   4.5-7.3   0	Corliss	2				:	0
7-10   2.0-15   6.1-7.3   0-15     10-14   1.0-15   6.1-7.8   0-15     14-80   0.0-1.0   7.4-8.4   5-30			0-80	0.0-4.0	0.1-/.8	0-12	0 
10-14   1.0-15   6.1-7.8   0-15     14-80   0.0-1.0   7.4-8.4   5-30	Karlstad	2	0-7	2.0-15	4.5-7.3	0	0
14-80   0.0-1.0   7.4-8.4   5-30	j	ĺ	7-10	2.0-15			0
i i i i i					1		0
			14-80	0.0-1.0	7.4-8.4	5-30	0
Hangaard 1   0-12   10-26   6.6-7.8   0	 	1	0-12	10-26	   6.6-7.8	   0	l l 0
12-80   2.0-6.0   7.4-8.4   5-15		-				1	0

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Cation-  exchange  capacity		Calcium   carbon-    ate	Gypsur
		In	meq/100 g	рН	Pct	Pct
1031:				 		
Seelyeville, ponded	90	0-18	140-200	4.5-7.3	0	0
		18-80	140-200	4.5-7.3	0	0
Cathro	4	0 - 8	120-170	   4.5-7.8	0	0
		8-40	120-170	4.5-7.8	0	0
		40-80	5.0-25	6.6-8.4	5-25	0
Dora	3	0-5	40-180	4.5-7.8	0	0
		5-31	40-180	4.5-7.8	0	0
		31-80	18-31 	6.1-8.4 	0-20	0
Markey	3	0-42	110-170	4.5-7.8	0-5	0
		42-80	1.0-3.0	5.6-8.4	0-5	0
1067:				 		
Fluvaquents,						
frequently flooded	60	0-11	10-35	5.6-7.8	0-15	0
		11-80	5.0-30 	5.6-7.8 	0-15	0
Hapludalfs	30	0 - 6	10-20	6.1-7.8	0-1	0
		6-8	5.0-15	6.1-7.8	0-1	0
		8-25	15-30	6.6-7.8	0-1	0
		25-80	5.0-25	7.4-8.4	5-30	0
Seelyeville	5	0-18	140-200	4.5-7.3	0	0
		18-80	140-200	4.5-7.3	0	0
Water	5			   <b></b> 		
1133B:						
Skime	85	0 - 6	5.0-10	6.1-7.3	0-5	0
		6-17	2.0-10	6.1-7.3	0-5	0
		17-22	5.0-15	6.1-7.3	0-5	0
		22-72	1.0-10	6.6-8.4	0-10	0
		72-80	1.0-15	6.6-8.4 	5-15   	0
Hiwood	10	0-3	1.0-7.0	4.5-6.0	0	0
		3-22	1.0-6.0	5.1-6.0	0	0
		22-80	1.0-6.0	5.6-7.8	0-15	0
Zippel	5	0-10	5.0-30	6.6-7.8	0-5	0
		10-16	3.0-15	6.6-7.8	0-15	0
		16-80	3.0-15	7.4-8.4	5-30	0
.134:						
Borup	55	0 - 9	15-30	7.4-8.4	10-25	0
		9-34	6.0-15	7.4-8.4	15-40	0
		34-80	3.0-10	7.4-8.4 	10-30	0
Glyndon	35	0 - 7	12-24	7.4-9.0	15-25	0
		7-80	6.0-14	7.4-9.0	20-40	0
Augsburg,				 		
depressional	5	0 - 9	10-30	7.4-8.4	5-30	0
		9-16	1.0-15	7.4-8.4	25-40	0 - 3
	'		i .		1 -	
		16-32 32-80	1.0-15	7.4-8.4	30-35	0 - 3 0 - 3

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Cation- exchange capacity	   Soil  reaction   	  Calcium  carbon-   ate	Gypsum
		In	meq/100 g	рН	Pct	Pct
1134:			 	 		
Skime	5	0-6	5.0-10	6.1-7.3	0-5	0
		6-17	2.0-10	6.1-7.3	0-5	0
		17-22	5.0-15	6.1-7.3	0-5	0
		22-72 72-80	1.0-10   1.0-15	6.6-8.4	0-10 5-15	0
			Ì		į į	
1144: Strathcona,				 		
depressional	45	0-12	25-51	7.4-8.4	5-15	0
uop10551011u1		12-18	5.0-15	7.4-8.4	15-30	0
		18-39	2.0-8.0	7.4-8.4	5-15	0
		39-80	10-20	7.4-8.4	20-45	0
Kratka, depressional-	45	0-9	6.0-30	   6.6-7.8	0-10	0
		9-26	1.0-8.0	6.6-7.8	0-15	0
		26-80	4.0-21	6.1-8.4	0-30	0
Kratka	5	0-8	6.0-20	   5.6-7.8	   0-15	0
		8-22	1.0-8.0	5.6-7.8	0-15	0
		22-80	4.0-21	6.1-8.4	0-30	0
Northwood	5	0-11	100-170	   5.1-7.8	   0	0
		11-16	5.0-15	5.6-7.8	0-15	0
	İ	16-25	1.0-10	5.6-8.4	5-30	0
		25-80	5.0-25	7.4-8.4	5-30	0
1154:				 		
Sax	90	0-15	120-170	5.1-6.5	0	0
	İ	15-24	10-58	6.1-7.3	0-5	0
		24-39	10-30	6.1-7.3	0-5	0
		39-71	5.0-30	7.4-8.4	5-20	0
		71-80	15-50	7.4-8.4	5-15	0
Wabanica	5	0 - 8	15-25	6.6-7.8	5-15	0
		8-19	10-30	6.6-7.8	5-15	0
		19-80	10-30	7.4-8.4	10-30	0
Cathro	3	0 - 8	120-170	4.5-7.8	0	0
		8-40	120-170	4.5-7.8	0	0
		40-80	5.0-25	6.6-8.4	5-25	0
Woodslake	2	0 - 8	35-55	6.6-7.8	0	0
		8-15	42-62	6.6-8.4		0
		15-36	40-60	7.4-8.4	5-30	0
		36-80	18-36	7.4-8.4	5-30	0
1158:					i i	
Skagen	85	0-9	15-30	7.4-7.8	2-20	0
		9-19	5.0-15	7.4-8.4		0
		19-80	5.0-15	7.4-8.4	20-45	0
Percy	10	0-10	1	6.6-8.4		0
		10-25	6.0-11	7.4-8.4		0
		25-80	5.0-10	7.4-8.4	20-45	0
Foxhome	5	0-10	10-24	6.6-7.8	0	0
		10-15	2.0-8.0	6.6-7.8		0
		15-23		7.4-8.4		0
		23-80	6.0-18	7.4-8.4	15-30	0

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Cation-  exchange  capacity	Soil  reaction 	Calcium   carbon-    ate	Gypsu
				<u> </u>		
 		In	meq/100 g	PH	Pct	Pct
1170:	į		j		j j	
Skagen, very cobbly	85	0-10	15-30	7.4-7.8	2-20	0
		10-28	5.0-15	7.4-8.4	25-50	0
		28-80	5.0-15	7.4-8.4	20-45	0
Percy, very cobbly	10	0 - 8	13-33	6.6-8.4	0-20	0
I	I	8-23	6.0-11	7.4-8.4	25-50	0
		23-80	5.0-10	7.4-8.4	20-45	0
Foxhome	5 l	0-10	10-24	   6.6-7.8	0	0
		10-15	2.0-8.0	6.6-7.8	0-10	0
į	į	15-23	2.0-10	7.4-8.4	5-15	0
į	į	23-80	6.0-18	7.4-8.4	15-30	0
 1179B:						
Moranville	85	0 - 8	1.0-10	6.6-7.8	0-10	0
į	j	8-24	1.0-5.0	6.6-7.8	0-10	0
I	I	24-42	15-35	6.6-7.8	0-15	0
		42-80	10-30	7.4-8.4	5-30	0
Baudette	5	0 - 8	5.0-22	   5.6-7.3	0	0
į	į	8-10	4.0-24	5.6-7.3	0	0
I	I	10-30	12-30	5.6-7.8	0-5	0
		30-80	3.0-23	7.4-8.4	10-20	0
Hiwood	5	0-3	1.0-7.0	   4.5-6.0	0	0
į	i	3-22	1.0-6.0	5.1-6.0	0	0
į	į	22-80	1.0-6.0	5.6-7.8	0-15	0
   Spooner	5 I	0-6	   4.0-19	   5.6-7.8	   0-15	0
	-	6-15	1.0-11	5.6-7.8	0-15	0
į	i	15-22	11-21	6.1-7.8	0-15	0
	ļ	22-60	2.0-20	7.4-8.4	10-40	0
 1181:						
Rosewood	50	0 - 8	8.0-24	7.4-8.4	5-20	0
I		8-15	5.0-15	7.4-8.4	15-30	0
		15-80	1.0-4.0	7.4-8.4	5-25	0
Ulen	40 I	0-10	10-25	   7.4-8.4	5-30	0
į	i	10-18	0.0-10	7.9-8.4	5-30	0
į	j	18-80	0.0-10	7.4-8.4	5-30	0
   Redby	5	0-3	2 0-10	   5.1-6.5	   0	0
kedby	3	3-28		5.1-6.5		0
	i	28-80	1	6.1-7.8		0
D		0.14				
Deerwood	3	0-14 14-16	1	5.6-7.8 6.1-8.4		0
		16-80	1.0-10	7.4-8.4		0
į	į				ļ <u> </u>	
Syrene	2	0-11	10-25	7.4-8.4		0
		11-19 19-80	10-35   1.0-10	7.9-8.4 7.4-8.4	15-35     10-30	0
	i					·
1182:	[				ļ	
Warroad	85	0-11	5.0-25	6.6-7.8	0	0
		11-26 26-80	1.0-10   10-30	7.4-7.8 7.4-8.4	0   5-30	0
		20-00	10-30	/0.4	1 2-20	U

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	_	Cation- exchange capacity	   Soil  reaction 	  Calcium   carbon-    ate	Gypsum
		In	meq/100 g	рн	Pct	Pct
1182:				 	 	
Wabanica	7	0-8	15-25	6.6-7.8	5-15	0
		8-19	10-30	6.6-7.8	5-15	0
		19-80	10-30	7.4-8.4	10-30	0
Enstrom	5	0-6	3.0-15	   6.6-7.8	   0	0
2115 02 011		6-29	1.0-8.0	6.6-8.4	0-10	0
		29-80	5.0-18	7.4-8.4	10-40	
Sax	3	0-15	   120-170	   5.1-6.5	   0	0
bur		15-24	10-58	6.1-7.3		0
		24-39	10-30	6.1-7.3	0-5	0
	İ	39-71	5.0-30	7.4-8.4	5-20	0
		71-80	15-50	7.4-8.4	5-15	0
1187:			 	 	 	
Dora, ponded	90	0-24	150-230	4.5-7.8	0	0
		24-30	125-200	4.5-7.8	0	0
		30-80	30-60	6.1-8.4	5-30	0
Seelyeville, ponded	4	0-18	140-200	4.5-7.3	0	0
		18-80	140-200	4.5-7.3	0	0
Wildwood	4	0-12	140-200	   5.1-6.5	   0	0
WII GWOOG	-	12-33	30-60	5.6-7.3	0 1	0
		33-80	30-60	7.4-8.4	5-30	0
Boash	2	0-9	20-32	   6.6-7.8	   0-10	0
Boasn		9-29	18-38	6.6-7.8	5-20	0
		29-80	8.0-18	7.4-8.4	10-30	0
1191:				 		
Sahkahtay	85	0 - 4	6.0-15	5.6-7.3	0	0
- i	İ	4-8	2.0-8.0	5.6-7.3	0	0
j	İ	8-14	10-16	6.1-7.3	0	0
		14-80	1.0-4.0	7.4-8.4	5-15	0
Cormant	5	0-6	5.0-26	6.1-7.3	0	0
		6-80	1.0-5.0	6.1-7.8	0-15	0
Deerwood	5	0-14	90-190	   5.6-7.8	   0-5	0
		14-16	8.0-30	6.1-8.4	0-15	0
		16-80	1.0-10	7.4-8.4	10-20	0
Karlstad	3	0 - 7	2.0-15	   4.5-7.3	   0	0
		7-10		6.1-7.3		0
	İ	10-14	1.0-15	6.1-7.8	0-15	0
		14-80	0.0-1.0	7.4-8.4	5-30	0
Redby	2	0-3	2.0-10	   5.1-6.5		0
		3-28	1			0
		28-80	0.0-4.0	6.1-7.8	0-15	0
1206:				 	 	
Cormant	55	0-7	5.0-26	6.1-7.3	0	0
		7-80	1.0-5.0	6.1-7.8	0-15	0
Redby	35	0-4	2.0-10	   5.1-6.5	   0	0
		4-30	1			0
		30-80	1			0
İ	İ		1		l i	

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	   Cation-  exchange  capacity	   Soil  reaction 	  Calcium   carbon-    ate	Gypsum
		In	meq/100 g	pН	Pct	Pct
1206:	-	0.0				•
Hiwood	5	0-3 3-22	1.0-7.0	4.5-6.0   5.1-6.0	0     0	0
		22-80	1.0-6.0	5.6-7.8	0     0-15	0
		22-00	1.0-0.0	3.0-7.8	0-13	U
Leafriver	5	0-13	100-180	4.5-7.3	   0	0
		13-80	1.0-15	4.5-7.3	0	0
İ			İ	İ	i i	
1214:	İ		İ	ĺ	į į	
Mustinka	90	0-9	28-40	6.6-7.8	0	0
		9-35	20-35	6.6-7.8	0	0
		35-62	10-18	7.4-8.4	10-30	0
		62-80	10-18	7.4-8.4	10-30	0
Name ald a	4	0 10	   8.0-18	   6.6-7.3	   0	0
Espelie	4	0-10 10-27	2.0-8.0	6.6-7.8	0     0-15	0
		27-80	16-30	7.4-8.4	10-30	0-3
		27-00	10-30	7.4-0.4 	10-30   	0-3
Wildwood	4	0-12	140-200	5.1-6.5	0	0
		12-33	30-60	5.6-7.3	0	0
İ		33-80	30-60	7.4-8.4	5-30	0
	İ		İ	İ	i i	
Dalbo	2	0-15	8.0-25	5.6-7.3	0	0
		15-23	14-40	5.1-7.3	0	0
		23-80	10-40	7.4-8.4	5-30	0
			!			
1274B:	4.0					•
Redby	40	0-10	2.0-10	5.1-6.5	0	0
		10-35 35-80	1.0-5.0	5.1-6.5   6.1-7.8	0     0-15	0
		33-60	0.0-4.0	6.1-7.6	0-15	U
Hiwood	30	0-7	3.0-10	4.5-6.0	0	0
		7-32	1.0-6.0	5.1-6.0	0	0
	i	32-80	1.0-6.0	5.6-7.8	0-15	0
Leafriver, wooded	15	0-10	100-180	4.5-7.3	0	0
		10-13	10-50	4.5-7.3	0	0
		13-80	1.0-15	4.5-7.3	0	0
	_					•
Clearriver	5	0-2	4.0-13	5.1-6.5	0	0
		2-21 21-80	1.0-6.0	6.6-7.8	0     1-10	0
		21-00	1.0-3.0	0.0-7.8	1-10	U
Cormant	5	0-6	5.0-26	6.1-7.3	0	0
		6-80	1.0-5.0	6.1-7.8	0-15	0
	i		İ	İ	i i	
Zimmerman	5	0-6	2.0-5.0	5.1-6.5	0	0
		6-80	1.0-6.0	5.1-7.3	0	0
			[			
1298:						
Borup	90	0-8	15-30	7.4-8.4	10-25	0
		8-80	6.0-15	7.4-8.4	15-40	0
Augsburg,			 	 	 	
depressional	3	0-9	10-30	   7.4-8.4	   5-30	0
asprossionar	, ,	9-16	1.0-15	7.4-8.4	25-40	0-3
		16-32	1.0-15	7.4-8.4	30-35	0-3
		32-80	20-50	7.4-8.4	10-30	0-3
	l İ				ı i	

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Cation- exchange capacity	Soil reaction	Calcium  carbon-    ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
1298:				 		
Glyndon	3	0 - 7	12-24	7.4-9.0	15-25	0
		7 - 80	6.0-14	7.4-9.0	20-40	0
Sago	2	0-14	100-190	   4.5-6.5	0	0
		14-80	4.0-20	5.6-8.4	0-20	0
Skime	2	0-6	   5.0-10	   6.1-7.3	   0-5	0
	i	6-17	2.0-10	6.1-7.3	0-5	0
		17-22	5.0-15	6.1-7.3	0-5	0
		22-72	1.0-10	6.6-8.4	0-10	0
		72-80	1.0-15	6.6-8.4	5-15	0
1302:					i i	
Foldahl	85	0-12	6.0-18	6.1-7.8	0	0
		12-30 30-80	2.0-8.0	6.6-7.8   7.4-8.4	0-10     10-20	0
		30-80	0.0-10	7.1-0.1	10-20	U
Kratka	10	0 - 8	6.0-20	5.6-7.8	0-15	0
		8-22	1.0-8.0	5.6-7.8	0-15	0
		22-80	4.0-21	6.1-8.4 	0-30	0
Foxhome	5	0-10	10-24	6.6-7.8	0	0
		10-15	2.0-8.0	6.6-7.8	0-10	0
		15-23	2.0-10	7.4-8.4	5-15	0
		23-80	6.0-18	7.4-8.4	15-30	0
1304:					į į	
Glyndon	85	0-11	12-24	7.4-9.0	15-25	0
		11-56 56-80	6.0-14   2.0-10	7.4-9.0 7.4-9.0	20-40   15-35	0
		36-60	2.0-10	7.4-9.0 	13-35	U
Borup	10	0-8	15-30	7.4-8.4	10-25	0
		8-80	6.0-15	7.4-8.4	15-40	0
Skime	5	0-6	   5.0-10	   6.1-7.3	   0-5	0
İ	İ	6-17	2.0-10	6.1-7.3	0-5	0
		17-22	5.0-15	6.1-7.3	0-5	0
		22-72	1.0-10	6.6-8.4	0-10	0
		72-80	1.0-15	6.6-8.4 	5-15	0
1305:	İ		İ	İ	i i	
Hilaire	85	0-13	8.0-18	6.6-7.3	0-10	0
		13-33	3.0-10	6.6-7.8	0-10	0
		33-80	16-30	7.4-8.4	10-30	0
Espelie	11	0-10	8.0-18	6.6-7.3	0	0
		10-27	2.0-8.0	6.6-7.8	0-15	0
		27-80	16-30	7.4-8.4	10-30	0 - 3
Grano	2	0-11	8.0-24	6.6-7.8	0-5	0
	ĺ	11-41		7.4-8.4	5-25	0
		41-80	18-30	7.4-8.4	5-25	0
Redby	2	0-3	2.0-10	   5.1-6.5	0	0
	İ	3-28	1.0-5.0	5.1-6.5	0	0
		28-80	0.0-4.0	6.1-7.8	0-15	0

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Cation-  exchange  capacity	Soil  reaction 	Calcium  carbon-   ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
1314: Tacoosh	   90	0-17	   150-200	   5.6-7.8	   0	0
14000511	90	17-33	150-200	5.6-7.8	0 1	0
		33-80	10-30	6.6-8.4	0-30	0
Rifle	   8	0-8	   150-180	   4.5-7.3	   0	0
KILIG		8-80	50-150	4.5-7.3	0	0
Sax	   2	0.15	   120-170	   5.1-6.5		
Sax	<u>2</u>   	0-15 15-24	10-58	6.1-7.3	0   0-5	0
		24-39	10-30	6.1-7.3	0-5	0
		39-71	5.0-30	7.4-8.4	5-20	0
		71-80	15-50	7.4-8.4	5-15	0
1316:	 			 		
Wheatville	85	0-12	15-35	7.4-8.4	5-30	0
		12-35	5.0-15	7.4-8.4	15-40	0
		35-80	20-65	7.4-7.8	10-30	0
Augsburg	13	0-9	10-30	7.4-8.4	5-30	0
	İ	9-33	1.0-15	7.4-8.4	25-40	0-3
		33-80	20-50	7.4-8.4	15-30	0-3
Grano	2	0-11	8.0-24	6.6-7.8	0-5	0
		11-41	18-36	7.4-8.4	5-25	0
		41-80	18-30	7.4-8.4	5-25	0
1326:				 	i i	
Augsburg,						
depressional	45	0-9 9-16	10-30 1.0-15	7.4-8.4	5-30   25-40	0 0-3
		16-32	1.0-15	7.4-8.4	30-35	0-3
		32-80	20-50	7.4-8.4	10-30	0-3
Mahariaa						
Wabanica, depressional	   45	0 - 8	20-40	   6.6-7.8	0-15	0
_	j i	8-26	15-40	7.4-8.4	5-30	0
		26-68	10-30	7.4-8.4	5-30	0
		68-80	20-50	7.4-8.4	5-30	0
Sax	6	0-15	120-170	5.1-6.5	0	0
		15-24	10-58	6.1-7.3	0-5	0
		24-39	10-30	6.1-7.3	: :	0
		39-71	5.0-30	7.4-8.4	5-20	0
		71-80	15-50 	7.4-8.4 	5-15   	0
Espelie	2	0-10		6.6-7.3	0	0
		10-27	2.0-8.0	6.6-7.8	0-15	0
	 	27-80	16-30 	7.4-8.4 	10-30   	0-3
Zippel	2	0-10	5.0-30	6.6-7.8	0-5	0
		10-16	3.0-15	6.6-7.8	0-15	0
	 	16-80	3.0-15	7.4-8.4 	5-30	0
1327B:					į i	
Karlstad	65	0-11	1	4.5-7.3	0	0
		11-14		6.1-7.3	0-15	0
	 	14-16 16-80	1.0-15	6.1-7.8   7.4-8.4	0-15	0
	ı	10-00	1 0.0-1.0	,	1 3-30	•

Table 25.--Chemical Properties of the Soils--Continued

				<u> </u>		
Map symbol and	Percent	Depth	Cation-	Soil	Calcium	Gypsum
component name	of map unit		exchange capacity	reaction	carbon-	
		l In	  meq/100 g	рн	Pct	Pct
1327B:	) 					
Marquette	25	0-10   10-18	2.0-12	5.6-7.3	0	0
		18-80	1.0-4.0	7.4-8.4	5-20	0
Sahkahtay	   7	   0-4	6.0-15	   5.6-7.3	0	0
Sankancay	,	4-8	2.0-8.0	5.6-7.3	0	0
		8-14	10-16	6.1-7.3	0	0
		14-80	1.0-4.0	7.4-8.4	5-15	0
Redby	3	0-3	2.0-10	5.1-6.5	0	0
		3-28	1.0-5.0	5.1-6.5	0	0
		28-80	0.0-4.0	6.1-7.8	0-15	0
1328:				! 		
Northwood, wooded	90	0-15	100-170	5.1-7.8	0	0
		15-21	5.0-15	5.6-7.8	0-15	0
		21-39 39-80	1.0-10	5.6-8.4	5-30	0
		39-80	5.0-25	7.4-0.4	5-30	
Berner, wooded	5	0-20	115-160	5.6-7.3	0	0
		20-44	2.0-8.0	6.1-7.8	0-5	0
		44-80 	10-20	7.4-8.4	15-35 	0
Grygla	5	0-6	2.0-16	6.1-7.3	0	0
		6-26	1.0-8.0	6.6-7.8	0   10-35	0
		20-00	4.0-14	7.4-0.4	10-33	
1333: Dora, wooded	   90	   0-8	   40-180	   4.5-7.8	0	0
Dola, wooded	90	8-26	40-180	4.5-7.8	0 1	0
		26-80	18-31	6.1-8.4	0-20	0
Lupton	   4	   0-16	100-200	   4.5-7.8	0	0
Dapton		16-80	100-200	4.5-7.8	0	0
Wildwood	   4	   0-12	   140-200	   5.1-6.5	0	0
WIIdWOOd	, <u> </u>	12-33	30-60	5.6-7.3	0 1	0
		33-80	30-60	7.4-8.4	5-30	0
Auganaush	2	   0-5	15-30	   5.6-7.3	0	0
	İ	5-7	5.0-15	5.6-7.3	0	0
		7-18	15-30	5.6-7.3	0	0
		18-58   58-80		7.4-8.4	15-30 15-30	0
				İ	į į	
1356: Water, miscellaneous.			   	   		
1399B:				 		
Two Inlets	85		2.0-10	!	1	0
			1.0-10	6.1-6.5	1	0
			3.0-15	6.1-6.5 6.6-7.3		0
77 t / 1.3.						
Wurtsmith	6		2.0-10			0
			0.0-7.0			0
Zimmerman	   6			   5 1 6 F	0	0
TTHRETHOIL	່ ນ 	0-6   6-80	2.0-5.0	5.1-6.5	1	0
			İ	İ	İ	

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	_	Cation-  exchange  capacity	   Soil  reaction   	  Calcium  carbon-   ate	Gypsum
		In	meq/100 g	рН	Pct	Pct
1399B: Meehan	   3	0-8	2.0-15	3.5-7.3	0	0
Meenan	]	8-31	1.0-8.0	3.5-6.5	0	0
		31-80	0.0-4.0	3.5-7.3	0	0
1401:		0.5				•
Grygla, depressional-	90	0-5 5-36	1.0-8.0	6.1-7.3	0   0	0
		36-80	4.0-14	7.4-8.4	10-35	0
						-
Northwood, wooded	5	0-15	100-170	5.1-7.8	0	0
		15-21	5.0-15	5.6-7.8	0-15	0
		21-39	1	5.6-8.4	5-30	0
		39-80	5.0-25	7.4-8.4	5-30	0
Chilgren	   3	0-5	5.0-20	6.1-7.3	0	0
0		5-9	2.0-20	6.1-7.3	0	0
	İ	9-16	10-30	6.1-7.8	0-1	0
		16-80	5.0-25	7.4-8.4	10-30	0
G		0.6				•
Grygla	2	0-6 6-26	2.0-16	6.1-7.3	0   0	0
		26-80	4.0-14	7.4-8.4	10-35	0
						-
1402:			İ	İ	j	
Leafriver, wooded	90	0-10	100-180	4.5-7.3	0	0
		10-13	10-50	4.5-7.3	0	0
		13-80	1.0-15	4.5-7.3	0	0
Cormant	4	0-6	5.0-26	6.1-7.3	0	0
		6-80	1.0-5.0	6.1-7.8	0-15	0
Tawas	4	0-10	80-120	4.5-7.8	0-5	0
		10-27 27-80	80-120 1.0-6.0	4.5-7.8	0-5	0
		27-80	1.0-0.0	3.0-0.1	0-30	
Redby	2	0-3	2.0-10	5.1-6.5	0	0
		3-28	1.0-5.0	5.1-6.5	0	0
		28-80	0.0-4.0	6.1-7.8	0-15	0
1404:						
Berner, wooded	   90	0-20	115-160	5.6-7.3	0	0
201101, 110000		20-44	!	6.1-7.8		0
		44-80	10-20	7.4-8.4	15-35	0
Lupton	4	0-16		4.5-7.8	0	0
		16-80	100-200	4.5-7.8	0	0
Northwood, wooded	4	0-15	100-170	5.1-7.8	0	0
		15-21	5.0-15	5.6-7.8	'	0
	l İ	21-39	1.0-10	5.6-8.4	5-30	0
		39-80	5.0-25	7.4-8.4	5-30	0
Coveral		0.6				
Grygla	2	0-6 6-26	2.0-16	6.1-7.3	0   0	0
		26-80	4.0-14	7.4-8.4	10-35	0
			İ		į	

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Cation-  exchange  capacity	Soil  reaction 	Calcium   carbon-    ate	Gypsum
		In	meq/100 g	рН	Pct	Pct
1405:					 	
Lallie	90	0 - 8	21-51	7.4-8.4	0-10	0
		8-80	23-60	7.4-9.0	5-25	0
Sax	7	0-15	120-170	   5.1-6.5	0	0
		15-24	10-58	6.1-7.3	0-5	0
		24-39	10-30	6.1-7.3	0-5	0
		39-71	5.0-30	7.4-8.4	5-20	0
		71-80	15-50	7.4-8.4	5-15	0
Wabanica	3	0 - 8	15-25	6.6-7.8	5-15	0
		8-19	10-30	6.6-7.8	5-15	0
		19-80	10-30	7.4-8.4	10-30	0
1414:					 	
Nereson, very cobbly-	85	0-7	10-14	6.1-7.3	0	0
	ĺ	7-11	5.0-13	6.6-7.8	0-5	0
		11-29	3.0-12	7.4-8.4	15-30	0
		29-80	3.0-12	7.4-8.4	10-30	0
Percy, very cobbly	10	0 - 8	13-33	6.6-8.4	0-20	0
		8-23	6.0-11	7.4-8.4	25-50	0
		23-80	5.0-10	7.4-8.4	20-45	0
Pelan	3	0-6	3.0-16	   6.1-7.3	0	0
		6-12	7.0-15	6.1-7.8	0	0
		12-24	1.0-5.0	7.4-8.4	0-15	0
		24-60	4.0-10	7.4-8.4	15-40	0
Foxhome	2	0-10	10-24	6.6-7.8	0	0
		10-15	2.0-8.0	6.6-7.8	0-10	0
		15-23	2.0-10	7.4-8.4	5-15	0
		23-80	6.0-18	7.4-8.4	15-30	0
1428:						
Karlsruhe	85	0 - 8	11-22	6.6-8.4	5-30	0
		8-16	7.0-14	6.6-8.4	15-30	0
		16-80	0.0-3.0	7.4-8.4	10-25	0
Syrene	10	0-11	10-25	7.4-8.4	5-30	0
		11-19	10-35	7.9-8.4	15-35	0
		19-80	1.0-10	7.4-8.4	10-30	0
Ulen	5	0-10	10-25	   7.4-8.4	5-30	0
		10-16	0.0-10	7.9-8.4	5-30	0
		16-67	0.0-10	7.4-8.4	5-30	0
		67-80	5.0-15	7.4-8.4	5-30	0
1444:						
Wurtsmith	85		2.0-10			0
			0.0-7.0			0
		45-80	0.0-4.0	5.1-7.8 	0   	0
Meehan	10		2.0-15			0
			1.0-8.0			0
		31-80	0.0-4.0	3.5-7.3	0	0
Clearriver	2	0-2	4.0-13	5.1-6.5	0	0
		2-21	1.0-6.0	5.1-7.3	0	0
		01 00	1.0-3.0		1-10	0

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Cation-  exchange  capacity	Soil reaction	Calcium  carbon-   ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
1444:						
Two Inlets	2	0-2	2.0-10	   6.6-7.3	0	0
		2-4	1.0-10	6.1-6.5	0	0
	į	4-17	3.0-15	6.1-6.5	0	0
		17-80	0.0-3.0	6.6-7.3	0	0
Cormant	1	0-6	5.0-26	   6.1-7.3	0	0
002	- 1	6-80	1.0-5.0	6.1-7.8	0-15	0
1440						
1448: Grano	90	0-13	26-42	   6.6-7.8	0-5	0
GIANO	90	13-54	18-36	7.4-8.4	5-25	0
		54-80	18-30	7.4-8.4	5-25	0
	_					
Percy	5	0-10	13-33	6.6-8.4	0-20	0
		10-25 25-80	6.0-11 5.0-10	7.4-8.4	25-50	0
		25-60	5.0-10	/.4-0.4 	20-45	U
Augsburg	3	0 - 9	10-30	7.4-8.4	5-30	0
	I	9-33	1.0-15	7.4-8.4	25-40	0 - 3
		33-80	20-50	7.4-8.4	15-30	0-3
Woodslake	2	0-8	35-55	   6.6-7.8	0	0
	i	8-15	42-62	6.6-8.4	0	0
	j	15-36	40-60	7.4-8.4	5-30	0
	ļ	36-80	18-36	7.4-8.4	5-30	0
1449:				 		
Grano	90	0-11	8.0-24	6.6-7.8	0-5	0
		11-41	18-36	7.4-8.4	5-25	0
		41-80	18-30	7.4-8.4	5-25	0
Percy	5	0-10	13-33	6.6-8.4	0-20	0
	I	10-25	6.0-11	7.4-8.4	25-50	0
		25-80	5.0-10	7.4-8.4	20-45	0
Augsburg	3	0-9	10-30	   7.4-8.4	5-30	0
3 3		9-33	1.0-15	7.4-8.4	25-40	0-3
	ļ	33-80	20-50	7.4-8.4	15-30	0-3
Woodslake	2	0-8	35-55	   6.6-7.8	   0	0
WOOdbiake	- 1	8-15	42-62	6.6-8.4	0 1	0
	i	15-36	40-60	7.4-8.4	1 1	0
	į	36-80	18-36	7.4-8.4		0
1807:				 		
Cathro, ponded	90	0-19	150-230	4.5-7.8	0	0
_	į	19-80	2.0-20	5.6-8.4	5-25	0
T	4	0 10	100 100			•
Haug	4	0-10 10-16	14-26	6.6-7.8		0
		16-80	'	7.4-8.4	5-30	0
			ļ			
Seelyeville, ponded	4	0-18	'	4.5-7.3	0	0
		18-80	140-200	4.5-7.3	0	0
Percy	2	0 - 8	13-33	6.6-8.4	0-20	0
	İ	8-23	6.0-11	7.4-8.4	25-50	0
		23-80	5.0-10	7.4-8.4	20-45	0

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Cation- exchange capacity	   Soil  reaction   	  Calcium   carbon-    ate	Gypsum
		In	meq/100 g	рН	Pct	Pct
1808:				 		
Markey, ponded	90	0-17 17-80	110-170	4.5-7.8	0-5	0
Leafriver	4     4	0-13 13-80	   100-180   1.0-15	   4.5-7.3   4.5-7.3		0
Seelyeville, ponded	4	0-18 18-80	   140-200   140-200	   4.5-7.3   4.5-7.3		0
Cormant	2	0-6 6-80	   5.0-26   1.0-5.0	   6.1-7.3   6.1-7.8	0     0-15	0
		0 00				· ·
1918: Croke	85	0-12 12-21	   10-25   5.0-15	   6.6-7.8   6.6-8.4	0-10     0-15	0
		21-80	20-50	7.9-8.4	10-30	0
Augsburg	13	0-9 9-33	10-30   1.0-15	   7.4-8.4   7.4-8.4	5-30     25-40	0 0 - 3
	İ	33-80	20-50	7.4-8.4	15-30	0 - 3
Grano	2	0-11 11-41	8.0-24	6.6-7.8	0-5	0
		41-80	18-30	7.4-8.4	5-25	0
1923B:					j j	
Garnes, very stony	85	0-6 6-13	4.0-18   10-18	6.1-7.8 6.6-7.8	0	0
		13-80	5.0-14	7.4-8.4	10-40	0
Chilgren	10	0 - 5 5 - 9	5.0-20	6.1-7.3	0	0
		9-16	10-30	6.1-7.8	0-1	0
		16-80	5.0-25	7.4-8.4	10-30	0
Eckvoll	3	0-6	3.0-14	6.1-7.3	0	0
		6-21 21-26	1.0-7.0   8.0-18	6.1-7.3	0     0	0
		26-80	6.0-16	7.4-8.4	10-30	0
Pelan	2	0-6	3.0-16	6.1-7.3	0	0
			7.0-15 1.0-5.0	6.1-7.8		0
			4.0-10	7.4-8.4		0
1984:				! 	i i	
Leafriver	90	0-13 13-80	1.0-180	4.5-7.3		0
Cormant	5		   5.0-26   1.0-5.0	   6.1-7.3   6.1-7.8		0
Markey	3	0-42 42-80	   110-170   1.0-3.0	   4.5-7.8   5.6-8.4		0
Redby	2		2.0-10	İ	j j	0
	į		1.0-5.0	•		0
		28-80	0.0-4.0	6.1-7.8 	0-15	0

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and	   Percent	Depth	   Cation-	   Soil	  Calcium	Gypsum
	!	Depth	1			Gypsun
component name	of		exchange	reaction	carbon-	
	map unit		capacity		ate	
				<u> </u>	<u>                                     </u>	
		In	meq/100 g	pH	Pct	Pct
W:						
Water.						

Table 26.--Soil Moisture Status by Depth

## (Depths of layers are in feet.)

Map symbol and component name	Hydro-  logic  group	January	February	March	April	May	June	July	August	September	October	November	December
47:		 			İ			1	i				
Colvin	C/D	0.0-3.0:   Moist  3.0-6.7:	0.0-3.3:   Moist  3.3-6.7:	0.0-2.1:   Moist  2.1-6.7:	0.0-0.5:   Moist  0.5-6.7:	0.0-0.8:   Moist  0.8-6.7:	0.0-1.3:   Moist  1.3-6.7:	0.0-3.0:   Moist  3.0-6.7:	0.0-3.8:   Moist  3.8-6.7:	0.0-3.3:   Moist  3.3-6.7:	0.0-1.6:   Moist  1.6-6.7:	0.0-1.3:   Moist  1.3-6.7:	0.0-2.1:   Moist  2.1-6.7:
	   	3.0-6.7:   Wet 	3.3-6.7:   Wet	2.1-6./:   Wet 	Wet	0.8-6.7:   Wet	1.3-6.7:   Wet	3.0-6.7:   Wet	3.8-6.7:   Wet	3.3-6.7:   Wet	1.6-6./:   Wet	1.3-6.7:   Wet	2.1-6./:   Wet
Bearden	c	0.0-4.1:   Moist	0.0-4.9:   Moist	0.0-3.8:   Moist	0.0-2.0:   Moist	0.0-2.5:   Moist	0.0-2.8:   Moist	0.0-3.9:   Moist	0.0-6.7:   Moist	0.0-4.6:   Moist	0.0-4.1:   Moist	0.0-4.1:   Moist	0.0-3.8:   Moist
		4.1-6.7:   Wet	4.9-6.7:   Wet	5.7-6.7:   Wet	2.0-6.7:   Wet	2.5-6.7: Wet	2.8-6.7:   Wet	3.9-6.7:   Wet	6.7:   Wet*	4.6-6.7:   Wet	4.1-6.7:   Wet	4.1-6.7:   Wet	3.8-6.7:   Wet
Grano	   D 	  0.0-2.1:   Moist	0.0-2.5: Moist	  0.0-1.3:   Moist	  0.0:   Moist*	  0.0-0.5:   Moist	  0.0-1.3:   Moist	  0.0-2.1:   Moist	  0.0-3.0:   Moist	0.0-2.5: Moist	  0.0-1.6:   Moist	0.0-1.3:   Moist	  0.0-1.6:   Moist
	   	2.1-6.7:   Wet	2.5-6.7:   Wet	1.3-6.7:   Wet	0.0-6.7:   Wet	0.5-6.7:   Wet	1.3-6.7:   Wet	2.1-6.7:   Wet	3.0-6.7:   Wet	2.5-6.7:   Wet	1.6-6.7:   Wet	1.3-6.7:   Wet	1.6-6.7:   Wet
Sax	   D 	  0.0-1.6:   Moist  1.6-6.7:	  0.0-2.5:   Moist  2.5-6.7:	  0.0:   Moist*  0.0-6.7:	  0.0:   Moist*  0.0-6.7:	  0.0:   Moist*  0.0-6.7:	  0.0-0.5:   Moist  0.5-6.7:	  0.0-0.8:   Moist  0.8-6.7:	  0.0-1.6:   Moist  1.6-6.7:	  0.0-1.3:   Moist  1.3-6.7:	0.0-0.8:   Moist  0.8-6.7:	0.0-0.3:   Moist   0.3-6.7:	0.0-1.3:   Moist   1.3-6.7:
	   	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
48B:	i	İ	İ	İ	į	į	i	i	i	İ	İ	i	i
Hiwood	A       	0.0-5.4:   Moist   5.4-6.7:   Wet 	Moist	0.0-4.1:   Moist   4.1-6.7:   Wet 	0.0-2.5:   Moist  2.5-6.7:   Wet 	0.0-2.8:   Moist  2.8-6.7:   Wet 	0.0:   Dry*   0.0-3.3:   Moist   3.3-6.7:   Wet	0.0-0.3:   Dry   0.3-6.7:   Moist 	0.0-0.5:   Dry  0.5-6.7:   Moist 	0.0-0.2:   Dry  0.2-4.9:   Moist  4.9-6.7:	0.0-4.6:   Moist   4.6-6.7:   Wet 	0.0-4.1:   Moist  4.1-6.7:   Wet 	0.0-4.9:   Moist  4.9-6.7:   Wet 
Redby	     B	    0.0-3.3:	0.0-4.1:	0.0-3.3:	0.0-1.5:	0.0-1.8:	0.0:	0.0-0.2:	0.0-0.3:	0.0-0.2:	0.0-3.0:	0.0-2.5:	0.0-3.0:
	-	Moist  3.3-6.7:   Wet	Moist  4.1-6.7:   Wet	Moist  3.3-6.7:   Wet	Moist  1.5-6.7:   Wet	Moist  1.8-6.7:   Wet	Dry*  0.0-2.5:   Moist  2.5-6.7:	Dry  0.2-4.9:   Moist  4.9-6.7:	Dry  0.3-6.7:   Moist	Dry  0.2-4.9:   Moist  4.9-6.7:	Moist  3.0-6.7:   Wet	Moist  2.5-6.7:   Wet	Moist  3.0-6.7:   Wet
	 						Wet	Wet		Wet			
Clearriver	   B 	  0.0-5.4:   Moist  5.4-6.7:	  0.0-6.2:   Moist  6.2-6.7:	  0.0-4.1:   Moist  4.1-6.7:	  0.0-3.0:   Moist  3.0-6.7:	  0.0-3.8:   Moist  3.8-6.7:	  0.0:   Dry*  0.0-4.4:	  0.0-0.2:   Dry  0.2-6.7:	  0.0-0.3:   Dry  0.3-6.7:	  0.0-0.2:   Dry  0.2-4.9:	0.0-4.6:   Moist   4.6-6.7:	  0.0-4.1:   Moist  4.1-6.7:	  0.0-4.9:   Moist  4.9-6.7:
		Wet 	Wet 	Wet 	Wet 	Wet	Moist  4.4-6.7:	Moist 	Moist	Moist  4.9-6.7:	Wet 	Wet 	Wet 

Table 26.--Soil Moisture Status by Depth--Continued

and	Hydro-  logic  group	January	February 	March   	April	May	June	July	August	September	October 	November	Decembe
	!			ļ	1		1		ļ			1	
48B: Cormant	7 / 10	  0.0-2.5:	0.0-3.3:	  0.0-2.1:	0.0-0.5:	0.0-1.3:	0.0-1.6:	0.0:	0.0:	0.0-3.0:	0.0-2.1:	0.0-1.6:	0.0-2.1:
COIMAIIC	A/D	Moist	Moist	Moist	Moist	Moist	Moist	Drv*	Dry*	Moist	Moist	Moist	Moist
		2.5-6.7:		2.1-6.7:	0.5-6.7:	1.3-6.7:	1.6-6.7:	0.0-3.3:	0.0-4.9:	3.0-6.7:	2.1-6.7:	1.6-6.7:	2.1-6.7:
	i	Wet	Wet	Wet	Wet	Wet	Wet	Moist	Moist	Wet	Wet	Wet	Wet
	i						i	3.3-6.7:	4.9-6.7:	i	i		i
	į			į	į	Ì	į	Wet	Wet	į	į	į	
Zimmerman	   A	  0.0-6.7:	0.0-6.7:	  0.0-6.7:	  0.0-6.7:	0.0-6.7:	0.0-0.2:	0.0-0.3:	0.0-0.7:	0.0-0.5:	0.0-6.7:	0.0-6.7:	0.0-6.7:
	i	Moist	Moist	Moist	Moist	Moist	Dry	Dry	Dry	Dry	Moist	Moist	Moist
	İ		i	j	i	i	0.2-6.7:	0.3-6.7:	0.7-6.7:	0.5-6.7:	j	i	i
	į				į	į	Moist	Moist	Moist	Moist			
52:						l I							
Augsburg	B/D	0.0-2.1:	0.0-2.6:	0.0-2.3:	0.0-0.5:	0.0-0.8:	0.0-1.6:	0.0-3.0:	0.0-3.8:	0.0-3.3:	0.0-2.5:	0.0-1.6:	0.0-2.0:
		Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist
		2.1-6.7:	2.6-6.7:	2.3-6.7:	0.5-6.7:	0.8-6.7:	1.6-6.7:	3.0-6.7:	3.8-6.7:	3.3-6.7:	2.5-6.7:	1.6-6.7:	2.0-6.7:
	 	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Croke	   B	0.0-5.4:	0.0-5.7:	0.0-4.6:	0.0-2.5:	0.0-2.5:	0.0-3.0:	0.0-4.6:	0.0:	0.0-4.1:	0.0-3.8:	0.0-3.3:	0.0-4.1:
		Moist	Moist	Moist	Moist	Moist	Moist	Moist	Dry*	Moist	Moist	Moist	Moist
		5.4-6.7:	5.7-6.7:	4.6-6.7:	2.5-6.7:	2.5-6.7:	3.0-6.7:	4.6-6.7:	0.0-6.7:	4.1-6.7:	3.8-6.7:	3.3-6.7:	4.1-6.7:
	!	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Moist	Wet	Wet	Wet	Wet
	 	 		 					6.7:   Wet*				
<b>G</b>	į			0.0-1.3:									
Grano	D	0.0-2.1:   Moist	0.0-2.5: Moist	0.0-1.3:   Moist	0.0:   Moist*	0.0-0.5:   Moist	0.0-1.3: Moist	0.0-2.1:   Moist	0.0-3.0:   Moist	0.0-2.5: Moist	0.0-1.6:   Moist	0.0-1.3:   Moist	0.0-1.6:   Moist
	 	2.1-6.7:	2.5-6.7:	1.3-6.7:	0.0-6.7:	0.5-6.7:	1.3-6.7:	2.1-6.7:	3.0-6.7:	2.5-6.7:	1.6-6.7:	1.3-6.7:	1.6-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Sago	   D	  0.0-1.6:	0.0-2.5:	  0.0:	0.0:	0.0:	0.0-0.5:	0.0-0.8:	  0.0-1.6:	0.0-1.3:	0.0-0.8:	0.0-0.3:	  0.0-1.3:
bago	5	Moist	Moist	Moist*	Moist*	Moist*	Moist	Moist	Moist	Moist	Moist	Moist	Moist
	<u> </u>	1.6-6.7:	2.5-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.5-6.7:	0.8-6.7:	1.6-6.7:	1.3-6.7:	0.8-6.7:	0.3-6.7:	1.3-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
59:	 	 		 									
Grimstad	В	0.0-3.8:	0.0-4.6:	0.0-3.0:	0.0-1.5:	0.0-1.8:	0.0-3.3:	0.0-0.2:	0.0-0.2:	0.0:	0.0-3.0:	0.0-2.5:	0.0-3.3:
	İ	Moist	Moist	Moist	Moist	Moist	Moist	Dry	Dry	Dry*	Moist	Moist	Moist
		3.8-6.7:	4.6-6.7:	3.0-6.7:	1.5-6.7:	1.8-6.7:	3.3-6.7:	0.2-5.7:	0.2-6.7:	0.0-3.8:	3.0-6.7:	2.5-6.7:	3.3-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Moist	Moist	Moist	Wet	Wet	Wet
								5.7-6.7:		3.8-6.7:			
								Wet		Wet			

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro-  logic  group	January   	February	March 	April	May	June 	July 	August 	September	October	November	Decembe
			1	1	1	1	1	I	i i	l	i i	1	1
59:	İ			İ	i		i	i	i	İ	i	i	
Strathcona	B/D	0.0-3.0:	0.0-3.3:	0.0-2.1:	0.0-0.5:	0.0-0.8:	0.0-1.6:	0.0-3.3:	0.0-4.1:	0.0-3.3:	0.0-2.5:	0.0-1.6:	0.0-2.1:
		Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist
		3.0-6.7:	3.3-6.7:	2.1-6.7:	0.5-6.7:	0.8-6.7:	1.6-6.7:	3.3-6.7:	4.1-6.7:	3.3-6.7:	2.5-6.7:	1.6-6.7:	2.1-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Foxhome	   B	  0.0-5.4:	0.0-5.7:	0.0-4.6:	0.0-2.5:	0.0-3.0:	0.0:	0.0-0.2:	0.0-0.3:	0.0:	0.0-3.9:	0.0-3.3:	0.0-4.6:
roxilonie	5	Moist	Moist	Moist	Moist	Moist	Drv*	Dry	Drv	Drv*	Moist	Moist	Moist
	 	5.4-6.7:	5.7-6.7:	4.6-6.7:	2.5-6.7:	3.0-6.7:	0.0-3.6:	0.2-5.4:	0.3-6.7:	0.0-4.6:		3.3-6.7:	4.6-6.7:
	 	Wet	Wet	Wet	Wet	Wet	Moist	Moist	Moist	Moist	Wet	Wet	Wet
	İ						3.6-6.7:	5.4-6.7:	6.7:	4.6-6.7:			
	į		į	į	į	j	Wet	Wet	Wet*	Wet	į	į	į
64:	 	 											
Ulen	B	0.0-3.3:	0.0-4.1:	0.0-3.3:	0.0-2.0:	0.0-2.5:	0.0:	0.0-0.2:	0.0-0.3:	0.0:	0.0-3.0:	0.0-2.5:	0.0-3.0:
	İ	Moist	Moist	Moist	Moist	Moist	Dry*	Dry	Dry	Dry*	Moist	Moist	Moist
	į	3.3-6.7:	4.1-6.7:	3.3-6.7:	2.0-6.7:	2.5-6.7:	0.0-3.0:	0.2-4.9:	0.3-6.7:	0.0-4.9:	3.0-6.7:	2.5-6.7:	3.0-6.7:
	ĺ	Wet	Wet	Wet	Wet	Wet	Moist	Moist	Moist	Moist	Wet	Wet	Wet
							3.0-6.7:	4.9-6.7:		4.9-6.7:			
		 					Wet	Wet		Wet			
Rosewood	   A/D	0.0-2.5:	0.0-3.3:	0.0-2.1:	0.0-0.5:	0.0-1.3:	0.0-1.6:	0.0:	0.0:	0.0-3.0:	0.0-2.1:	0.0-1.6:	0.0-2.1:
	ĺ	Moist	Moist	Moist	Moist	Moist	Moist	Dry*	Dry*	Moist	Moist	Moist	Moist
		2.5-6.7:	3.3-6.7:	2.1-6.7:	0.5-6.7:	1.3-6.7:	1.6-6.7:	0.0-3.3:	0.0-4.9:	3.0-6.7:	2.1-6.7:	1.6-6.7:	2.1-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Moist	Moist	Wet	Wet	Wet	Wet
								3.3-6.7:	4.9-6.7:				
		l I						Wet	Wet			ļ	
Redby	   B	0.0-3.3:	0.0-4.1:	0.0-3.3:	0.0-1.5:	0.0-1.8:	0.0:	0.0-0.2:	0.0-0.3:	0.0-0.2:	0.0-3.0:	0.0-2.5:	0.0-3.0:
	ĺ	Moist	Moist	Moist	Moist	Moist	Dry*	Dry	Dry	Dry	Moist	Moist	Moist
		3.3-6.7:	4.1-6.7:	3.3-6.7:	1.5-6.7:	1.8-6.7:	0.0-2.5:	0.2-4.9:	0.3-6.7:	0.2-4.9:	3.0-6.7:	2.5-6.7:	3.0-6.7:
		Wet	Wet	Wet	Wet	Wet	Moist	Moist	Moist	Moist	Wet	Wet	Wet
							2.5-6.7:	4.9-6.7:		4.9-6.7:			
		 					Wet	Wet		Wet			
Rushlake	   A	0.0-5.4:	0.0-6.2:	0.0-4.1:	0.0-3.0:	0.0-3.8:	0.0:	0.0-0.3:	0.0-0.5:	0.0-0.3:	0.0-4.6:	0.0-4.1:	0.0-4.9:
		Moist	Moist	Moist	Moist	Moist	Dry*	Dry	Dry	Dry	Moist	Moist	Moist
		5.4-6.7:	6.2-6.7:	4.1-6.7:	3.0-6.7:	3.8-6.7:	0.0-4.4:	0.3-6.7:	0.5-6.7:	0.3-4.9:	4.6-6.7:	4.1-6.7:	4.9-6.7:
		Wet	Wet	Wet	Wet	Wet	Moist	Moist	Moist	Moist	Wet	Wet	Wet
							4.4-6.7:			4.9-6.7:			
							Wet			Wet			

Table 26.--Soil Moisture Status by Depth--Continued

	Hydro-  logic  group	January 	February 	March 	April 	May	June 	July 	August 	September 	October   	November 	Decembe
65:	 	 											
Foxhome	   B 	  0.0-5.4:   Moist	0.0-5.7: Moist	0.0-4.6: Moist	0.0-2.5:   Moist	0.0-3.0:   Moist	  0.0:   Dry*	0.0-0.2: Dry	0.0-0.3: Dry	  0.0:   Dry*	  0.0-3.9:   Moist	0.0-3.3:   Moist	0.0-4.6:   Moist
	j I	5.4-6.7: Wet	5.7-6.7:   Wet	4.6-6.7: Wet	2.5-6.7: Wet	3.0-6.7: Wet	0.0-3.6:   Moist	0.2-5.4:   Moist	0.3-6.7:   Moist	0.0-4.6:   Moist	3.9-6.7: Wet	3.3-6.7: Wet	4.6-6.7: Wet
	 						3.6-6.7:   Wet	5.4-6.7:   Wet	6.7:   Wet*	4.6-6.7:   Wet			
Strandquist	   B/D	0.0-3.0:		0.0-2.1:	0.0-0.5:	0.0-0.8:	0.0-1.6:	0.0:	0.0:	0.0-3.3:	0.0-2.5:	0.0-1.6:	0.0-2.1:
		Moist	Moist	Moist	Moist	Moist	Moist	Dry*	Dry*	Moist	Moist	Moist	Moist
		3.0-6.7:	1	2.1-6.7:	0.5-6.7:	0.8-6.7:	1.6-6.7:	0.0-3.3:	0.0-4.1:	3.3-6.7:	2.5-6.7:	1.6-6.7:	2.1-6.7:
	   	Wet   	Wet 	Wet   	Wet   	Wet   	Wet 	Moist  3.3-6.7:   Wet	Moist  4.1-6.7:   Wet	Wet 	Wet   	Wet 	Wet 
Skagen	   C	  0.0-5.4:	0.0-5.9:	  0.0-4.9:	0.0-2.5:	0.0-2.8:	0.0:	0.0-0.2:	0.0-0.2:	0.0:	0.0-4.3:	0.0-3.3:	0.0-4.6:
		Moist	Moist	Moist	Moist	Moist	Dry*	Dry	Dry	Dry*	Moist	Moist	Moist
		5.4-6.7:	5.9-6.7:	4.9-6.7:	2.5-6.7:	2.8-6.7:	0.0-3.1:	0.2-5.7:	0.2-6.7:	0.0-4.9:	4.3-6.7:	3.3-6.7:	4.6-6.7:
		Wet	Wet	Wet	Wet	Wet	Moist	Moist	Moist	Moist	Wet	Wet	Wet
	 						3.1-6.7:   Wet	5.7-6.7:   Wet	6.7:   Wet*	4.9-6.7:   Wet			
67:		 											
Bearden	C	0.0-4.1:		0.0-3.8:	0.0-2.0:	0.0-2.5:	0.0-2.8:	0.0-3.9:	0.0-6.7:	0.0-4.6:	0.0-4.1:	0.0-4.1:	0.0-3.8:
		Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist
	   	4.1-6.7:   Wet	4.9-6.7:   Wet	5.7-6.7:   Wet	2.0-6.7:   Wet	2.5-6.7:   Wet	2.8-6.7:   Wet	3.9-6.7:   Wet	6.7:   Wet*	4.6-6.7:   Wet	4.1-6.7:   Wet	4.1-6.7:   Wet	3.8-6.7:   Wet
Colvin	   C/D	0.0-3.0:	1	0.0-2.1:	0.0-0.5:	0.0-0.8:	0.0-1.3:	0.0-3.0: Moist	0.0-3.8:	0.0-3.3:	0.0-1.6:	0.0-1.3:   Moist	0.0-2.1:
	 	Moist  3.0-6.7:	Moist  3.3-6.7:	Moist  2.1-6.7:	Moist  0.5-6.7:	Moist  0.8-6.7:	Moist  1.3-6.7:	Moist  3.0-6.7:	Moist  3.8-6.7:	Moist  3.3-6.7:	Moist  1.6-6.7:	Moist  1.3-6.7:	Moist  2.1-6.7:
	   	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
77:	İ	 				ì				i		i	
Garnes	В	0.0-5.4: Moist	0.0-5.9: Moist	0.0-4.9: Moist	0.0-2.5: Moist	0.0-2.8: Moist	0.0: Drv*	0.0-0.2:	0.0-0.2: Dry	0.0: Drv*	0.0-4.3: Moist	0.0-3.3: Moist	0.0-4.6: Moist
	 	5.4-6.7:	5.9-6.7:	4.9-6.7:	2.5-6.7:	2.8-6.7:	0.0-3.1:	0.2-5.7:	0.2-6.7:	0.0-4.9:	4.3-6.7:	3.3-6.7:	4.6-6.7:
	 	Wet	Wet	Wet	Wet	Wet	Moist	Moist	Moist	Moist	Wet.	Wet	Wet
	 						3.1-6.7:	5.7-6.7:	6.7:	4.9-6.7:			
	į			į		į	Wet	Wet	Wet*	Wet			į
Chilgren	   C	  0.0-3.0:	0.0-3.3:	  0.0-2.1:	0.0-0.5:	0.0-0.8:	0.0-1.3:	0.0-3.0:	0.0-3.8:	0.0-3.3:	0.0-1.6:	0.0-1.3:	0.0-2.1:
		Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist
		3.0-6.7:	3.3-6.7:	2.1-6.7:	0.5-6.7:	0.8-6.7:	1.3-6.7:	3.0-6.7:	3.8-6.7:	3.3-6.7:	1.6-6.7:	1.3-6.7:	2.1-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet

Table 26.--Soil Moisture Status by Depth--Continued

and	Hydro-  logic  group	January 	February 	March   	April   	May   	June	July   	August	September   	October   	November	Decembe
						!			ļ	ļ		Ţ	
77: Eckvoll			  0.0-5.7:	0.0-4.6:	0.0-2.5:	  0.0-3.1:	0.0-0.1:	0.0-0.2:			0.0-3.8:	0.0-3.3:	0.0-4.1:
ECKVOII	В	0.0-5.4: Moist	0.0-5.7:   Moist	0.0-4.6:   Moist	0.0-2.5:   Moist	0.0-3.1:   Moist	0.0-0.1:   Dry	0.0-0.2:   Dry	0.0-0.3:   Dry	0.0:   Dry*	0.0-3.8:   Moist	0.0-3.3:   Moist	0.0-4.1:   Moist
	 	MOIST  5.4-6.7:	5.7-6.7:	4.6-6.7:	2.5-6.7:	3.1-6.7:	0.1-3.8:	0.2-4.9:	0.3-6.7:	0.0-4.1:	3.8-6.7:	3.3-6.7:	Moist  4.1-6.7:
	 	5.4-6.7:   Wet	Wet	Wet	Wet	Wet	Moist	Moist	Moist	Moist	Wet	Wet	Wet
	l İ						3.8-6.7:	4.9-6.7:	6.7:	4.1-6.7:			
							Wet	Wet	Wet*	Wet			
Pelan	   B	  0.0-5.4:	0.0-5.7:	  0.0-4.6:	0.0-2.5:	0.0-3.0:	0.0:	0.0-0.2:	0.0-0.3:	0.0:	0.0-3.9:	0.0-3.3:	0.0-4.6:
		Moist	Moist	Moist	Moist	Moist	Dry*	Dry	Dry	Dry*	Moist	Moist	Moist
		5.4-6.7:	5.7-6.7:	4.6-6.7:	2.5-6.7:	3.0-6.7:	0.0-3.6:	0.2-5.4:	0.3-6.7:	0.0-4.6:	3.9-6.7:	3.3-6.7:	4.6-6.7:
		Wet	Wet	Wet	Wet	Wet	Moist	Moist	Moist	Moist	Wet	Wet	Wet
							3.6-6.7:	5.4-6.7:	6.7:	4.6-6.7:			
	 						Wet	Wet	Wet*	Wet			
111:						İ							
Hangaard	A/D	0.0-3.0:	0.0-3.3:	0.0-2.5:	0.0-0.3:	0.0-0.8:	0.0-1.6:	0.0:	0.0:	0.0-2.5:	0.0-2.1:	0.0-1.6:	0.0-2.1:
		Moist	Moist	Moist	Moist	Moist	Moist	Dry*	Dry*	Moist	Moist	Moist	Moist
		3.0-6.7:	3.3-6.7:	2.5-6.7:	0.3-6.7:	0.8-6.7:	1.6-6.7:	0.0-2.5:	0.0-3.3:	2.5-6.7:	2.1-6.7:	1.6-6.7:	2.1-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Moist  2.5-6.7:	Moist  3.3-6.7:	Wet 	Wet	Wet 	Wet
	 	 						2.5-6.7:   Wet	3.3-6.7:   Wet				
Deerwood	ת/ פ	  0.0-1.6:	0.0-2.5:	  0.0:	0.0:	0.0:	0.0-0.5:	0.0-0.8:	  0.0-1.6:	0.0-1.3:	0.0-0.8:	0.0-0.3:	0.0-1.3:
Deel wood	D/D 	Moist	Moist	Moist*	Moist*	Moist*	Moist	Moist	Moist	Moist	Moist	Moist	Moist
	l I	1.6-6.7:	2.5-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.5-6.7:	0.8-6.7:	1.6-6.7:	1.3-6.7:	0.8-6.7:	0.3-6.7:	1.3-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Rushlake	   A	  0.0-5.4:	0.0-6.2:	  0.0-4.1:	0.0-3.0:	0.0-3.8:	0.0:	0.0-0.3:	0.0-0.5:	0.0-0.3:	0.0-4.6:	0.0-4.1:	0.0-4.9:
	İ	Moist	Moist	Moist	Moist	Moist	Dry*	Dry	Dry	Dry	Moist	Moist	Moist
	ĺ	5.4-6.7:	6.2-6.7:	4.1-6.7:	3.0-6.7:	3.8-6.7:	0.0-4.4:	0.3-6.7:	0.5-6.7:	0.3-4.9:	4.6-6.7:	4.1-6.7:	4.9-6.7:
		Wet	Wet	Wet	Wet	Wet	Moist	Moist	Moist	Moist	Wet	Wet	Wet
	 	 					4.4-6.7:   Wet			4.9-6.7:   Wet			
Rosewood	   a/d	  0.0-2.5:	0.0-3.3:	  0.0-2.1:	0.0-0.5:	  0.0-1.3:	0.0-1.6:	0.0:	0.0:	0.0-3.0:	  0.0-2.1:	0.0-1.6:	  0.0-2.1:
	, -	Moist	Moist	Moist	Moist	Moist	Moist	Dry*	Dry*	Moist	Moist	Moist	Moist
	İ	2.5-6.7:	3.3-6.7:	2.1-6.7:	0.5-6.7:	1.3-6.7:		0.0-3.3:	0.0-4.9:	3.0-6.7:	2.1-6.7:	1.6-6.7:	2.1-6.7:
	İ	Wet	Wet	Wet	Wet	Wet	Wet	Moist	Moist	Wet	Wet	Wet	Wet
				i	j		i	3.3-6.7:	4.9-6.7:	j	i		
	I	I	1	I	1	1	1	Wet	Wet	1	I	1	1

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro-  logic  group	January   	February	March   	April	May	June	July	August	September	October	November	Decembe
116:	 	 		 									
Redby	В     	0.0-3.3:   Moist   3.3-6.7:   Wet 	0.0-4.1:   Moist   4.1-6.7:   Wet 	0.0-3.3:   Moist   3.3-6.7:   Wet 	0.0-1.5:   Moist  1.5-6.7:   Wet 	0.0-1.8:   Moist  1.8-6.7:   Wet 	0.0:   Dry*   0.0-2.5:   Moist   2.5-6.7:   Wet	0.0-0.2:   Dry   0.2-4.9:   Moist   4.9-6.7:   Wet	0.0-0.3:   Dry   0.3-6.7:   Moist 	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7:	0.0-3.0:   Moist   3.0-6.7:   Wet 	0.0-2.5:   Moist   2.5-6.7:   Wet 	0.0-3.0:   Moist   3.0-6.7:   Wet 
	! 	! 					Wet	Wet		Wet			
Cormant	A/D         	0.0-2.5:   Moist  2.5-6.7:   Wet 	0.0-3.3:   Moist   3.3-6.7:   Wet 	0.0-2.1:   Moist  2.1-6.7:   Wet 	0.0-0.5:   Moist  0.5-6.7:   Wet 	0.0-1.3:   Moist   1.3-6.7:   Wet 	0.0-1.6:   Moist  1.6-6.7:   Wet 	0.0:   Dry*   0.0-3.3:   Moist   3.3-6.7:   Wet	0.0:   Dry*   0.0-4.9:   Moist   4.9-6.7:   Wet	0.0-3.0:   Moist  3.0-6.7:   Wet 	0.0-2.1:   Moist  2.1-6.7:   Wet 	0.0-1.6:   Moist   1.6-6.7:   Wet 	0.0-2.1:   Moist  2.1-6.7:   Wet 
Hiwood	A       	0.0-5.4:   Moist   5.4-6.7:   Wet 	0.0-6.2:   Moist   6.2-6.7:   Wet	0.0-4.1:   Moist   4.1-6.7:   Wet 	0.0-2.5:   Moist  2.5-6.7:   Wet 	0.0-2.8:   Moist  2.8-6.7:   Wet 	0.0:   Dry*   0.0-3.3:   Moist   3.3-6.7:   Wet	0.0-0.3:   Dry   0.3-6.7:   Moist 	0.0-0.5:   Dry  0.5-6.7:   Moist 	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-4.6:   Moist   4.6-6.7:   Wet 	0.0-4.1:   Moist  4.1-6.7:   Wet	0.0-4.9:   Moist  4.9-6.7:   Wet 
Leafriver	   A/D     	  0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-2.5:   Moist  2.5-6.7:   Wet	  0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.5:   Moist   0.5-6.7:   Wet	0.0-0.8:   Moist   0.8-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	  0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-0.3:   Moist  0.3-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet
117:	j	į	j	į	j	j	j	j	j	j	j	j	
Cormant	A/D       	0.0-2.5:   Moist  2.5-6.7:   Wet 	0.0-3.3:   Moist   3.3-6.7:   Wet 	0.0-2.1:   Moist  2.1-6.7:   Wet 	0.0-0.5:   Moist  0.5-6.7:   Wet 	0.0-1.3:   Moist  1.3-6.7:   Wet 	0.0-1.6:   Moist  1.6-6.7:   Wet 	0.0:   Dry*  0.0-3.3:   Moist  3.3-6.7:   Wet	0.0:   Dry*  0.0-4.9:   Moist  4.9-6.7:   Wet	0.0-3.0:   Moist   3.0-6.7:   Wet 	0.0-2.1:   Moist  2.1-6.7:   Wet 	0.0-1.6:   Moist  1.6-6.7:   Wet 	0.0-2.1:   Moist  2.1-6.7:   Wet 
Leafriver	   A/D   	   0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-2.5:   Moist  2.5-6.7:   Wet	  0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-0.3:   Moist  0.3-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet
Epoufette	   B/D     	  0.0-3.0:   Moist  3.0-6.7:   Wet	0.0-3.3:   Moist   3.3-6.7:   Wet	  0.0-2.5:   Moist  2.5-6.7:   Wet 	0.0-0.3:   Moist   0.3-6.7:   Wet 	0.0-0.8:   Moist   0.8-6.7:   Wet 	0.0-1.6:   Moist   1.6-6.7:   Wet 	0.0:   Dry*   0.0-2.5:   Moist   2.5-6.7:   Wet	0.0:   Dry*   0.0-3.3:   Moist   3.3-6.7:   Wet	0.0-2.5:   Moist   2.5-6.7:   Wet 	  0.0-2.1:   Moist  2.1-6.7:   Wet 	0.0-1.6:   Moist   1.6-6.7:   Wet 	0.0-2.1:   Moist   2.1-6.7:   Wet 

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January   	February	March	April	May	June	July	August   	September	October	November	Decembe
117:													
Redby	B     	0.0-3.3:   Moist  3.3-6.7:   Wet	0.0-4.1:   Moist  4.1-6.7:   Wet	0.0-3.3:   Moist  3.3-6.7:   Wet	0.0-1.5:   Moist  1.5-6.7:   Wet	0.0-1.8:   Moist  1.8-6.7:   Wet	0.0:   Dry*  0.0-2.5:   Moist  2.5-6.7:	0.0-0.2:   Dry   0.2-4.9:   Moist   4.9-6.7:	0.0-0.3:   Dry  0.3-6.7:   Moist	0.0-0.2:   Dry  0.2-4.9:   Moist  4.9-6.7:	0.0-3.0:   Moist  3.0-6.7:   Wet	0.0-2.5:   Moist   2.5-6.7:   Wet	0.0-3.0:   Moist   3.0-6.7:   Wet
							Wet	Wet		Wet			
Grygla,		 		 									
depressional	B/D	0.0-1.6:	0.0-3.0:	0.0:	0.0:	0.0:	0.0-0.8:	0.0-1.6:	0.0-2.5:	0.0-1.6:	0.0-1.3:	0.0-0.8:	0.0-1.3:
		Moist  1.6-6.7:	Moist   3.0-6.7:	Moist*  0.0-6.7:	Moist*  0.0-6.7:	Moist*	Moist  0.8-6.7:	Moist  1.6-6.7:	Moist 2.5-6.7:	Moist  1.6-6.7:	Moist	Moist	Moist  1.3-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
133:		 		 									
Dalbo	В	0.0-5.4:	0.0-6.2:	0.0-5.4:	0.0-2.5:	0.0-3.0:	0.0-3.3:	0.0-4.9:	0.0:	0.0-4.1:	0.0-3.3:	0.0-3.0:	0.0-3.8:
		Moist	Moist	Moist	Moist	Moist	Moist	Moist	Dry*	Moist	Moist	Moist	Moist
	 	5.4-6.7:   Wet	6.2-6.7: Wet	5.4-6.7:   Wet	2.5-6.7: Wet	3.0-6.7: Wet	3.3-6.7:   Wet	4.9-6.7:   Wet	0.0-6.7: Moist	4.1-6.7:   Wet	3.3-6.7: Wet	3.0-6.7: Wet	3.8-6.7:   Wet
									6.7:   Wet*				
Mustinka	   C/D	  0.0-2.1:	0.0-2.5:	  0.0-1.3:	0.0:	0.0-0.5:	0.0-1.3:	0.0-2.1:	0.0-3.0:	0.0-2.5:	0.0-1.6:	0.0-1.3:	0.0-1.6:
	İ	Moist	Moist	Moist	Moist*	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist
		2.1-6.7:   Wet	2.5-6.7: Wet	1.3-6.7:   Wet	0.0-6.7: Wet	0.5-6.7: Wet	1.3-6.7:   Wet	2.1-6.7:   Wet	3.0-6.7:   Wet	2.5-6.7:   Wet	1.6-6.7:   Wet	1.3-6.7:   Wet	1.6-6.7:   Wet
Moranville	   B	  0.0-5.4:	0.0-5.7:	0.0-4.6:	0.0-2.5:	0.0-3.1:	0.0-0.1:	0.0-0.2:	0.0-0.3:	0.0:	0.0-3.8:	0.0-3.3:	0.0-4.1:
	j	Moist	Moist	Moist	Moist	Moist	Dry	Dry	Dry	Dry*	Moist	Moist	Moist
		5.4-6.7:	5.7-6.7:	4.6-6.7:	2.5-6.7:	3.1-6.7:	0.1-3.8:	0.2-4.9:	0.3-6.7:	0.0-4.1:	3.8-6.7:	3.3-6.7:	4.1-6.7:
		Wet	Wet	Wet 	Wet	Wet	Moist  3.8-6.7:	Moist  4.9-6.7:	Moist	Moist  4.1-6.7:	Wet	Wet 	Wet
							Wet	Wet	Wet*	Wet			
145:		 		 									
Enstrom	В	0.0-5.4:	0.0-5.7:	0.0-4.6:	0.0-2.5:	0.0-3.1:	0.0-0.1:	0.0-0.2:	0.0-0.3:	0.0:	0.0-3.8:	0.0-3.3:	0.0-4.1:
		Moist  5.4-6.7:	Moist   5.7-6.7:	Moist  4.6-6.7:	Moist  2.5-6.7:	Moist  3.1-6.7:	Dry  0.1-3.8:	Dry  0.2-4.9:	Dry 0.3-6.7:	Dry*  0.0-4.1:	Moist   3.8-6.7:	Moist  3.3-6.7:	Moist  4.1-6.7:
		Wet	Wet	Wet	Wet	Wet	Moist	Moist	Moist	Moist	Wet	Wet	Wet
	İ						3.8-6.7:	4.9-6.7:	6.7:	4.1-6.7:			
		[ ]					Wet	Wet	Wet*	Wet			
Grygla	B/D	0.0-3.0:		0.0-2.1:	0.0-0.5:	0.0-0.8:	0.0-1.6:	0.0-3.3:	0.0-4.1:	0.0-3.3:	0.0-2.5:	0.0-1.6:	0.0-2.1:
		Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist
		3.0-6.7: Wet	3.3-6.7:   Wet	2.1-6.7:   Wet	0.5-6.7: Wet	0.8-6.7: Wet	1.6-6.7:   Wet	3.3-6.7:   Wet	4.1-6.7:   Wet	3.3-6.7:   Wet	2.5-6.7: Wet	1.6-6.7:   Wet	2.1-6.7:   Wet
	 	MEL	WEL	MEL	Wet	Wet	Wet	Wet	Wet	Wet	WEL	Wet	Wet

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro-  logic  group	January	February	March	April	May	June	July	August	September	October	November	Decembe
145:		 	i		i	i	i			i		i	
Redby	B       	0.0-3.3:   Moist  3.3-6.7:   Wet 	0.0-4.1:   Moist   4.1-6.7:   Wet 	0.0-3.3:   Moist  3.3-6.7:   Wet 	0.0-1.5:   Moist  1.5-6.7:   Wet 	0.0-1.8:   Moist  1.8-6.7:   Wet 	0.0:   Dry*  0.0-2.5:   Moist  2.5-6.7:   Wet	0.0-0.2:   Dry  0.2-4.9:   Moist  4.9-6.7:   Wet	0.0-0.3:   Dry   0.3-6.7:   Moist 	0.0-0.2:   Dry   0.2-4.9:   Moist   4.9-6.7:   Wet	0.0-3.0:   Moist  3.0-6.7:   Wet 	0.0-2.5:   Moist  2.5-6.7:   Wet 	0.0-3.0:   Moist   3.0-6.7:   Wet 
Pelan	   B       	   0.0-5.4:   Moist  5.4-6.7:   Wet 	0.0-5.7:   Moist  5.7-6.7:   Wet 	0.0-4.6:   Moist   4.6-6.7:   Wet 	0.0-2.5:   Moist  2.5-6.7:   Wet 	0.0-3.0:   Moist  3.0-6.7:   Wet 	0.0:   Dry*  0.0-3.6:   Moist  3.6-6.7:   Wet	0.0-0.2:   Dry   0.2-5.4:   Moist   5.4-6.7:   Wet	0.0-0.3:   Dry   0.3-6.7:   Moist   6.7:   Wet*	0.0:   Dry*  0.0-4.6:   Moist  4.6-6.7:   Wet	0.0-3.9:   Moist   3.9-6.7:   Wet 	0.0-3.3:   Moist   3.3-6.7:   Wet 	0.0-4.6:   Moist   4.6-6.7:   Wet 
147:	İ	! 	i		i	1	i		i	i		i	
Spooner	C/D       	0.0-3.0:   Moist  3.0-6.7:   Wet	0.0-3.3:   Moist   3.3-6.7:   Wet	0.0-2.1:   Moist  2.1-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-3.0:   Moist  3.0-6.7:   Wet	0.0-3.8:   Moist   3.8-6.7:   Wet	0.0-3.3:   Moist  3.3-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-2.1:   Moist  2.1-6.7:   Wet
Baudette	B         	0.0-5.4:   Moist   5.4-6.7:   Wet 	0.0-6.2:   Moist   6.2-6.7:   Wet 	0.0-5.4:   Moist   5.4-6.7:   Wet 	0.0-2.5:   Moist  2.5-6.7:   Wet 	0.0-3.0:   Moist  3.0-6.7:   Wet 	0.0-3.6:   Moist  3.6-6.7:   Wet 	0.0-0.1:   Dry  0.1-5.7:   Moist  5.7-6.7:   Wet	0.0-0.2:   Dry   0.2-6.7:   Moist   6.7:   Wet*	0.0-4.9:   Moist  4.9-6.7:   Wet 	0.0-4.6:   Moist   4.6-6.7:   Wet 	0.0-3.3:   Moist  3.3-6.7:   Wet 	0.0-4.1:   Moist   4.1-6.7:   Wet 
Grygla	   B/D     	0.0-3.0:   Moist  3.0-6.7:   Wet	0.0-3.3:   Moist  3.3-6.7:   Wet	0.0-2.1:   Moist  2.1-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-3.3:   Moist  3.3-6.7:   Wet	0.0-4.1:   Moist  4.1-6.7:   Wet	0.0-3.3:   Moist  3.3-6.7:   Wet	0.0-2.5:   Moist   2.5-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-2.1:   Moist  2.1-6.7:   Wet
Sago	   D     	  0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-2.5:   Moist  2.5-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-0.8:   Moist   0.8-6.7:   Wet	0.0-0.3:   Moist  0.3-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet
158B:	į	İ	į		j	i	j	İ	į	İ	İ	j	İ
Zimmerman	A   	0.0-6.7:   Moist 	0.0-6.7:   Moist 	0.0-6.7:   Moist 	0.0-6.7:   Moist 	0.0-6.7:   Moist 	0.0-0.2:   Dry  0.2-6.7:   Moist	0.0-0.3:   Dry  0.3-6.7:   Moist	0.0-0.7:   Dry  0.7-6.7:   Moist	0.0-0.5:   Dry  0.5-6.7:   Moist	0.0-6.7:   Moist 	0.0-6.7:   Moist 	0.0-6.7:   Moist 

Table 26.--Soil Moisture Status by Depth--Continued

and	Hydro- logic group	January	February	March   	April	May	June	July	August	September	October	November	Decembe:
158B:		 		 									
Hiwood	A	0.0-5.4:	0.0-6.2:	0.0-4.1:	0.0-2.5:	0.0-2.8:	0.0:	0.0-0.3:	0.0-0.5:	0.0-0.2:	0.0-4.6:	0.0-4.1:	0.0-4.9:
		Moist	Moist	Moist	Moist	Moist	Dry*	Dry	Dry	Dry	Moist	Moist	Moist
		5.4-6.7:	6.2-6.7:	4.1-6.7:	2.5-6.7:	2.8-6.7:	0.0-3.3:	0.3-6.7:	0.5-6.7:	0.2-4.9:	4.6-6.7:	4.1-6.7:	4.9-6.7:
		Wet	Wet	Wet	Wet	Wet	Moist	Moist	Moist	Moist	Wet	Wet	Wet
				 !			3.3-6.7:   Wet			4.9-6.7:   Wet			
Two Inlets	A	  0.0-6.7:	0.0-6.7:	  0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-0.2:	0.0-0.3:	0.0-0.7:	0.0-0.5:	0.0-6.7:	  0.0-6.7:	0.0-6.7:
		Moist	Moist	Moist	Moist	Moist	Dry	Dry	Dry	Dry	Moist	Moist	Moist
			i				0.2-6.7:	0.3-6.7:	0.7-6.7:	0.5-6.7:	j		i
		   	İ	İ	İ	İ	Moist	Moist	Moist	Moist		İ	
Redby	В	0.0-3.3:	0.0-4.1:	0.0-3.3:	0.0-1.5:	0.0-1.8:	0.0:	0.0-0.2:	0.0-0.3:	0.0-0.2:	0.0-3.0:	0.0-2.5:	0.0-3.0:
		Moist	Moist	Moist	Moist	Moist	Dry*	Dry	Dry	Dry	Moist	Moist	Moist
		3.3-6.7:	4.1-6.7:	3.3-6.7:	1.5-6.7:	1.8-6.7:	0.0-2.5:	0.2-4.9:	0.3-6.7:	0.2-4.9:	3.0-6.7:	2.5-6.7:	3.0-6.7:
		Wet	Wet	Wet	Wet	Wet	Moist	Moist	Moist	Moist	Wet	Wet	Wet
				 !			2.5-6.7:   Wet	4.9-6.7:   Wet		4.9-6.7:   Wet			
167B:				 									
Baudette	В	0.0-5.4:	0.0-6.2:	0.0-5.4:	0.0-2.5:	0.0-3.0:	0.0-3.6:	0.0-0.1:	0.0-0.2:	0.0-4.9:	0.0-4.6:	0.0-3.3:	0.0-4.1:
		Moist	Moist	Moist	Moist	Moist	Moist	Dry	Dry	Moist	Moist	Moist	Moist
		5.4-6.7:	6.2-6.7:	5.4-6.7:	2.5-6.7:	3.0-6.7:	3.6-6.7:	0.1-5.7:	0.2-6.7:	4.9-6.7:	4.6-6.7:	3.3-6.7:	4.1-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Moist	Moist	Wet	Wet	Wet	Wet
		 						5.7-6.7:   Wet	6.7:   Wet*				
Spooner	C/D	  0.0-3.0:	0.0-3.3:	  0.0-2.1:	0.0-0.5:	0.0-0.8:	0.0-1.3:	0.0-3.0:	0.0-3.8:	0.0-3.3:	0.0-1.6:	0.0-1.3:	0.0-2.1:
_		Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist
j		3.0-6.7:	3.3-6.7:	2.1-6.7:	0.5-6.7:	0.8-6.7:	1.3-6.7:	3.0-6.7:	3.8-6.7:	3.3-6.7:	1.6-6.7:	1.3-6.7:	2.1-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Moranville	В	0.0-5.4:	0.0-5.7:	0.0-4.6:	0.0-2.5:	0.0-3.1:	0.0-0.1:	0.0-0.2:	0.0-0.3:	0.0:	0.0-3.8:	0.0-3.3:	0.0-4.1:
		Moist	Moist	Moist	Moist	Moist	Dry	Dry	Dry	Dry*	Moist	Moist	Moist
		5.4-6.7:	5.7-6.7:	4.6-6.7:	2.5-6.7:	3.1-6.7:	0.1-3.8:	0.2-4.9:	0.3-6.7:	0.0-4.1:	3.8-6.7:	3.3-6.7:	4.1-6.7:
		Wet	Wet	Wet	Wet	Wet	Moist	Moist	Moist	Moist	Wet	Wet	Wet
		 					3.8-6.7: Wet	4.9-6.7: Wet	6.7:   Wet*	4.1-6.7:   Wet			
187:			İ	į	İ	İ		İ	İ		İ	İ	İ
Haug	B/D	  0.0-1.6:	0.0-2.5:	0.0:	0.0:	0.0:	0.0-0.5:	0.0-0.8:	0.0-1.6:	0.0-1.3:	0.0-0.8:	0.0-0.3:	0.0-1.3:
naug	עום	Moist	Moist	Moist*	Moist*	Moist*	Moist	Moist	Moist	Moist	Moist	Moist	Moist
		1.6-6.7:	2.5-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.5-6.7:	0.8-6.7:	1.6-6.7:	1.3-6.7:	0.8-6.7:	0.3-6.7:	1.3-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet

Table 26.--Soil Moisture Status by Depth--Continued

	Hydro-  logic	January	February	March	April	May	June	July	August	September	October	November	Decembe
	group	İ	i	i	İ	i	i	i	i	İ	İ	i	İ
	<u> </u>	İ	İ	İ	i	i	İ	i	İ	İ	İ	i	İ
187:	į	İ	i	İ	i	i	i	j	j	İ	İ	i	İ
Percy	B/D	0.0-3.0:	0.0-3.3:	0.0-2.1:	0.0-0.5:	0.0-0.8:	0.0-1.3:	0.0-3.0:	0.0-3.8:	0.0-3.3:	0.0-1.6:	0.0-1.3:	0.0-2.1:
		Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist
		3.0-6.7:	3.3-6.7:	2.1-6.7:	0.5-6.7:	0.8-6.7:	1.3-6.7:	3.0-6.7:	3.8-6.7:	3.3-6.7:	1.6-6.7:	1.3-6.7:	2.1-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
a. D.													
Cathro	A/D	0.0-1.3: Moist	0.0-2.1: Moist	0.0:   Moist*	0.0:   Moist*	0.0:   Moist*	0.0:   Moist*	0.0-0.8:   Moist	0.0-1.6:   Moist	0.0-1.1:   Moist	0.0-0.5:   Moist	0.0-0.3:   Moist	0.0-0.8:   Moist
	 	Moist  1.3-6.7:	Moist  2.1-6.7:	MOIST*	Moist*	Moist*	Moist*	Moist  0.8-6.7:	Moist  1.6-6.7:	Moist  1.1-6.7:	0.5-6.7:	0.3-6.7:	0.8-6.7:
	 	1.3-6./:   Wet	2.1-6.7:   Wet	Wet	Wet	Wet	Wet	Wet	1.0-0.7:	Wet	Wet	Wet	Wet
	 	wet 	Wet	wet	Wet	Wet	wet	wet	wet	Wet	Wet	Wet	wet
Boash	   D	0.0-2.1:	0.0-2.5:	0.0-1.3:	0.0:	0.0-0.5:	0.0-1.3:	0.0-2.1:	0.0-3.0:	0.0-2.5:	0.0-1.6:	0.0-1.3:	0.0-1.6:
	į	Moist	Moist	Moist	Moist*	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist
	į	2.1-6.7:	2.5-6.7:	1.3-6.7:	0.0-6.7:	0.5-6.7:	1.3-6.7:	2.1-6.7:	3.0-6.7:	2.5-6.7:	1.6-6.7:	1.3-6.7:	1.6-6.7:
	ĺ	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
					İ	ļ	!		!		!	ļ	
191:													
Epoufette	в/р	0.0-3.0: Moist	0.0-3.3:   Moist	0.0-2.5:   Moist	0.0-0.3: Moist	0.0-0.8:   Moist	0.0-1.6:   Moist	0.0:   Dry*	0.0: Dry*	0.0-2.5: Moist	0.0-2.1:   Moist	0.0-1.6: Moist	0.0-2.1:   Moist
	 	3.0-6.7:	3.3-6.7:	2.5-6.7:	0.3-6.7:	0.8-6.7:	1.6-6.7:	0.0-2.5:	0.0-3.3:	2.5-6.7:	2.1-6.7:	1.6-6.7:	2.1-6.7:
	l I	3.0-6.7:   Wet	Wet	Wet	Wet	Wet	Wet	Moist	Moist	Wet	Wet	Wet	Wet
	 				<b></b>	<b></b>		2.5-6.7:	3.3-6.7:	<b></b>			
	 	İ		i	i	i	i	Wet	Wet		i	i	
	İ	İ	İ	İ	i	i	i	i	j	İ	İ	į	İ
Cormant	A/D	0.0-2.5:	0.0-3.3:	0.0-2.1:	0.0-0.5:	0.0-1.3:	0.0-1.6:	0.0:	0.0:	0.0-3.0:	0.0-2.1:	0.0-1.6:	0.0-2.1:
		Moist	Moist	Moist	Moist	Moist	Moist	Dry*	Dry*	Moist	Moist	Moist	Moist
		2.5-6.7:	3.3-6.7:	2.1-6.7:	0.5-6.7:	1.3-6.7:	1.6-6.7:	0.0-3.3:	0.0-4.9:	3.0-6.7:	2.1-6.7:	1.6-6.7:	2.1-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Moist	Moist	Wet	Wet	Wet	Wet
								3.3-6.7:	4.9-6.7:				
	 	l I					1	Wet	Wet				
Leafriver	   A/D	0.0-1.6:	0.0-2.5:	0.0:	0.0:	0.0:	0.0-0.5:	0.0-0.8:	0.0-1.6:	0.0-1.3:	0.0-0.8:	0.0-0.3:	0.0-1.3:
	, -	Moist	Moist	Moist*	Moist*	Moist*	Moist	Moist	Moist	Moist	Moist	Moist	Moist
	İ	1.6-6.7:	2.5-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.5-6.7:	0.8-6.7:	1.6-6.7:	1.3-6.7:	0.8-6.7:	0.3-6.7:	1.3-6.7:
	į	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
	ļ					1						1	
Meehan	В	0.0-3.3:	0.0-4.1:	0.0-3.3:	0.0-1.5:	0.0-1.8:	0.0:	0.0-0.2:	0.0-0.3:	0.0-0.2:	0.0-3.0:	0.0-2.5:	0.0-3.0:
	l	Moist	Moist	Moist	Moist	Moist	Dry*	Dry	Dry	Dry	Moist	Moist	Moist
		3.3-6.7:	1	3.3-6.7:	1.5-6.7:	1.8-6.7:	0.0-2.5:	0.2-4.9:	0.3-6.7:	0.2-4.9:	3.0-6.7:	2.5-6.7:	3.0-6.7:
		Wet	Wet	Wet	Wet	Wet	Moist	Moist	Moist	Moist	Wet	Wet	Wet
	I						2.5-6.7:	4.9-6.7:   Wet		4.9-6.7:   Wet			

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro-  logic  group	January   	February	March   	April	May	June	July	August	September	October	November	December
202:	 	 											
Meehan	в 	0.0-3.3:   Moist  3.3-6.7:	0.0-4.1:   Moist  4.1-6.7:	0.0-3.3:   Moist  3.3-6.7:	0.0-1.5:   Moist  1.5-6.7:	0.0-1.8:   Moist  1.8-6.7:	0.0:   Dry*  0.0-2.5:	0.0-0.2:   Dry  0.2-4.9:	0.0-0.3:   Dry  0.3-6.7:	0.0-0.2:   Dry  0.2-4.9:	0.0-3.0:   Moist  3.0-6.7:	0.0-2.5:   Moist  2.5-6.7:	0.0-3.0:   Moist  3.0-6.7:
	   	Wet 	Wet 	Wet 	Wet	Wet	Moist   2.5-6.7:	Moist 4.9-6.7:	Moist	Moist 4.9-6.7:	Wet 	Wet 	Wet 
	 	 					Wet	Wet		Wet			
Cormant	A/D	0.0-2.5: Moist	Moist	0.0-2.1:   Moist	0.0-0.5:   Moist	0.0-1.3: Moist	0.0-1.6:   Moist	0.0: Dry*	0.0: Dry*	0.0-3.0:   Moist	0.0-2.1: Moist	0.0-1.6: Moist	0.0-2.1:   Moist
		2.5-6.7: Wet	3.3-6.7:   Wet	2.1-6.7:   Wet	0.5-6.7:   Wet	1.3-6.7:   Wet	1.6-6.7:   Wet	0.0-3.3: Moist	0.0-4.9:   Moist	3.0-6.7:   Wet	2.1-6.7:	1.6-6.7:   Wet	2.1-6.7:   Wet
	   	 		 				3.3-6.7:   Wet	4.9-6.7:   Wet				
Wurtsmith	   A	  0.0-5.4:   Moist	0.0-6.2: Moist	  0.0-4.1:   Moist	0.0-2.5:	0.0-2.8:	  0.0:   Drv*	0.0-0.3:	0.0-0.5:	  0.0-0.3:   Dry	0.0-4.6:	0.0-4.1: Moist	  0.0-4.9:   Moist
	 	Moist  5.4-6.7:   Wet	Moist  6.2-6.7:   Wet	Moist  4.1-6.7:   Wet	Moist  2.5-6.7:   Wet	2.8-6.7:	Dry*  0.0-3.3:   Moist	Dry  0.3-6.7:   Moist	Dry  0.5-6.7:	Dry  0.3-4.9:   Moist	Moist  4.6-6.7:   Wet	Moist  4.1-6.7:   Wet	Moist  4.9-6.7:   Wet
	   	wet   	wet   	wet   	wet   	Wet   	Moist  3.3-6.7:   Wet	MOIST 	Moist   	Moist  4.9-6.7:   Wet	wet   	wet   	wet   
Leafriver	   A/D	  0.0-1.6:	  0.0-2.5:	  0.0:	0.0:	0.0:	0.0-0.5:	0.0-0.8:	0.0-1.6:	  0.0-1.3:	0.0-0.8:	0.0-0.3:	  0.0-1.3:
	 	Moist  1.6-6.7:	Moist  2.5-6.7:	Moist*  0.0-6.7:	Moist*	Moist*  0.0-6.7:	Moist 0.5-6.7:	Moist  0.8-6.7:	Moist  1.6-6.7:	Moist  1.3-6.7:	Moist  0.8-6.7:	Moist  0.3-6.7:	Moist  1.3-6.7:
	 	Wet 	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
205:	į	İ	j	İ	j	i	j	j	i	i	į	j	
Karlstad	A 	0.0-5.4:   Moist	0.0-6.2:   Moist	0.0-4.1:   Moist	0.0-3.0:   Moist	0.0-3.8:   Moist	0.0:   Dry*	0.0-0.2:   Dry	0.0-0.3:   Dry	0.0-0.2:   Dry	0.0-4.6:   Moist	0.0-4.1:   Moist	0.0-4.9:   Moist
	l I	5.4-6.7:   Wet	6.2-6.7:   Wet	4.1-6.7:   Wet	3.0-6.7:   Wet	3.8-6.7:   Wet	0.0-4.4: Moist	0.2-6.7:	0.3-6.7: Moist	0.2-4.9: Moist	4.6-6.7:   Wet	4.1-6.7:   Wet	4.9-6.7:   Wet
	 						4.4-6.7:   Wet			4.9-6.7:   Wet			
Sahkahtay	   B 	  0.0-3.0:   Moist	0.0-3.3: Moist	  0.0-2.5:   Moist	0.0-0.3:   Moist	0.0-0.8: Moist	0.0-1.6:	  0.0:   Dry*	  0.0:   Dry*	0.0-2.5: Moist	0.0-2.1: Moist	0.0-1.6: Moist	0.0-2.1: Moist
	   	3.0-6.7:   Wet	3.3-6.7:   Wet	2.5-6.7:   Wet	0.3-6.7:	0.8-6.7:	1.6-6.7:   Wet	0.0-2.5:	0.0-3.3:   Moist	2.5-6.7:   Wet	2.1-6.7:   Wet	1.6-6.7:   Wet	2.1-6.7:   Wet
	j I							2.5-6.7: Wet	3.3-6.7: Wet				
Marquette	   A	  0.0-6.7:   Moist	0.0-6.7: Moist	  0.0-6.7:   Moist	  0.0-6.7:   Moist	  0.0:   Dry*	  0.0-0.3:   Dry	  0.0-0.5:   Dry	  0.0-0.7:   Dry	  0.0-0.5:   Dry	  0.0:   Dry*	  0.0-6.7:   Moist	  0.0-6.7:   Moist
	 	Moist 	Moist	Moist	Moist	Dry*  0.0-6.7:   Moist	Dry  0.3-6.7:   Moist	Dry  0.5-6.7:   Moist	Dry  0.7-6.7:   Moist	Dry  0.5-6.7:   Moist	0.0-6.7:   Moist	Moist	Moist  0.0-6.7:   Moist

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January 	February	March   	April	May	June	July	August	September	October	November	Decembe
205: Redby	   B   B     	  0.0-3.3:   Moist  3.3-6.7:   Wet 		  0.0-3.3:   Moist  3.3-6.7:   Wet 	  0.0-1.5:   Moist  1.5-6.7:   Wet 	0.0-1.8:   Moist   1.8-6.7:   Wet 	0.0:   Dry*   0.0-2.5:   Moist   2.5-6.7:   Wet	0.0-0.2:   Dry   0.2-4.9:   Moist   4.9-6.7:   Wet	0.0-0.3:   Dry   0.3-6.7:   Moist 			0.0-2.5: Moist 2.5-6.7: Wet	
Pits, gravel.													
242B: Marquette	   A     	  0.0-6.7:   Moist 	0.0-6.7:   Moist 	  0.0-6.7:   Moist 	0.0-6.7:   Moist 	0.0:   Dry*  0.0-6.7:   Moist	0.0-0.3:   Dry   0.3-6.7:   Moist	0.0-0.5:   Dry   0.5-6.7:   Moist		0.0-0.5:   Dry   0.5-6.7:   Moist	  0.0:   Dry*  0.0-6.7:   Moist		0.0-6.7:   Moist   0.0-6.7:   Moist
Karlstad	A	0.0-5.4:   Moist  5.4-6.7:   Wet 	0.0-6.2: Moist 6.2-6.7: Wet	  0.0-4.1:   Moist  4.1-6.7:   Wet 	0.0-3.0:   Moist  3.0-6.7:   Wet 	0.0-3.8:   Moist   3.8-6.7:   Wet 	0.0:   Dry*   0.0-4.4:   Moist   4.4-6.7:   Wet	0.0-0.2:   Dry   0.2-6.7:   Moist 	0.0-0.3:   Dry   0.3-6.7:   Moist 	0.0-0.2:   Dry   0.2-4.9:   Moist   4.9-6.7:   Wet	0.0-4.6:   Moist   4.6-6.7:   Wet 	0.0-4.1:   Moist  4.1-6.7:   Wet	0.0-4.9:   Moist  4.9-6.7:   Wet 
Pits, gravel.		 		ļ !									
280:													
Pelan	B       	0.0-5.4:   Moist   5.4-6.7:   Wet 	0.0-5.7: Moist  5.7-6.7:   Wet 	0.0-4.6:   Moist   4.6-6.7:   Wet 	0.0-2.5:   Moist  2.5-6.7:   Wet 	0.0-3.0:   Moist  3.0-6.7:   Wet 	0.0:   Dry*  0.0-3.6:   Moist  3.6-6.7:   Wet	0.0-0.2:   Dry   0.2-5.4:   Moist   5.4-6.7:   Wet	0.0-0.3:   Dry  0.3-6.7:   Moist  6.7:   Wet*	0.0:   Dry*   0.0-4.6:   Moist   4.6-6.7:   Wet	0.0-3.9:   Moist   3.9-6.7:   Wet 	0.0-3.3:   Moist  3.3-6.7:   Wet	0.0-4.6:   Moist  4.6-6.7:   Wet 
Strandquist	   B/D       	   0.0-3.0:   Moist   3.0-6.7:   Wet 	0.0-3.3: Moist 3.3-6.7: Wet	   0.0-2.1:   Moist  2.1-6.7:   Wet 	0.0-0.5:   Moist  0.5-6.7:   Wet 	0.0-0.8:   Moist   0.8-6.7:   Wet 	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0:   Dry*   0.0-3.3:   Moist   3.3-6.7:   Wet	0.0:   Dry*   0.0-4.1:   Moist   4.1-6.7:   Wet	0.0-3.3:   Moist   3.3-6.7:   Wet 	0.0-2.5:   Moist   2.5-6.7:   Wet 	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-2.1:   Moist  2.1-6.7:   Wet 
Garnes	   B       	  0.0-5.4:   Moist  5.4-6.7:   Wet 	0.0-5.9:   Moist   5.9-6.7:   Wet 	  0.0-4.9:   Moist  4.9-6.7:   Wet 	0.0-2.5:   Moist   2.5-6.7:   Wet 	0.0-2.8:   Moist  2.8-6.7:   Wet 	0.0:   Dry*   0.0-3.1:   Moist   3.1-6.7:   Wet	0.0-0.2:   Dry   0.2-5.7:   Moist   5.7-6.7:   Wet	0.0-0.2:   Dry   0.2-6.7:   Moist   6.7:   Wet*	0.0:   Dry*   0.0-4.9:   Moist   4.9-6.7:	0.0-4.3:   Moist  4.3-6.7:   Wet 	0.0-3.3:   Moist  3.3-6.7:   Wet 	0.0-4.6:   Moist  4.6-6.7:   Wet 

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro-  logic  group	January   	February	March	April	May	June	July	August	September	October	November	December
280:	 												
Marquette	A     	0.0-6.7:   Moist 	0.0-6.7:   Moist 	0.0-6.7:   Moist 	0.0-6.7:   Moist 	0.0:   Dry*  0.0-6.7:   Moist	0.0-0.3:   Dry  0.3-6.7:   Moist	0.0-0.5:   Dry  0.5-6.7:   Moist	0.0-0.7:   Dry  0.7-6.7:   Moist	0.0-0.5:   Dry  0.5-6.7:   Moist	0.0:   Dry*  0.0-6.7:   Moist	0.0-6.7:   Moist 	0.0-6.7:   Moist  0.0-6.7:   Moist
Pits, gravel.													
379: Percy, very	   	   				   							
cobbly	В/D       	0.0-3.0:   Moist   3.0-6.7:   Wet	0.0-3.3:   Moist  3.3-6.7:   Wet	0.0-2.1:   Moist  2.1-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-3.0:   Moist  3.0-6.7:   Wet	0.0-3.8:   Moist  3.8-6.7:   Wet	0.0-3.3:   Moist  3.3-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-2.1:   Moist  2.1-6.7:   Wet
Boash	   D     	0.0-2.1:   Moist  2.1-6.7:   Wet	0.0-2.5:   Moist  2.5-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-2.1:   Moist  2.1-6.7:   Wet	0.0-3.0:   Moist  3.0-6.7:   Wet	0.0-2.5:   Moist  2.5-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet
Strandquist	   B/D       	0.0-3.0:   Moist  3.0-6.7:   Wet 	0.0-3.3:   Moist   3.3-6.7:   Wet 	0.0-2.1:   Moist  2.1-6.7:   Wet 	0.0-0.5:   Moist   0.5-6.7:   Wet 	0.0-0.8:   Moist   0.8-6.7:   Wet 	0.0-1.6:   Moist   1.6-6.7:   Wet 	0.0:   Dry*   0.0-3.3:   Moist   3.3-6.7:   Wet	0.0:   Dry*   0.0-4.1:   Moist   4.1-6.7:   Wet	0.0-3.3:   Moist   3.3-6.7:   Wet 	0.0-2.5:   Moist   2.5-6.7:   Wet 	0.0-1.6:   Moist   1.6-6.7:   Wet 	0.0-2.1:   Moist  2.1-6.7:   Wet 
Haug	   B/D     	  0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-2.5:   Moist  2.5-6.7:   Wet	  0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.8:   Moist   0.8-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-0.8:   Moist   0.8-6.7:   Wet	0.0-0.3:   Moist  0.3-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet
Skagen, very cobbly	   c       	  0.0-5.4:   Moist  5.4-6.7:   Wet 		  0.0-4.9:   Moist  4.9-6.7:   Wet 	0.0-2.5:   Moist   2.5-6.7:   Wet 	0.0-2.8:   Moist   2.8-6.7:   Wet 	0.0:   Dry*  0.0-3.1:   Moist  3.1-6.7:   Wet	0.0-0.2:   Dry   0.2-5.7:   Moist   5.7-6.7:   Wet	0.0-0.2:   Dry   0.2-6.7:   Moist   6.7:   Wet*	0.0:   Dry*   0.0-4.9:   Moist   4.9-6.7:   Wet		0.0-3.3:   Moist   3.3-6.7:   Wet 	  0.0-4.6:   Moist  4.6-6.7:   Wet 
383: Percy	     B/D 	  0.0-3.0:   Moist	  0.0-3.3:   Moist	  0.0-2.1:   Moist	  0.0-0.5:   Moist	  0.0-0.8:   Moist	0.0-1.3: Moist	0.0-3.0: Moist	  0.0-3.8:   Moist	  0.0-3.3:   Moist	  0.0-1.6:   Moist	  0.0-1.3:   Moist	0.0-2.1: Moist
	 	3.0-6.7:   Wet	3.3-6.7: Wet	2.1-6.7:   Wet	0.5-6.7: Wet	0.8-6.7: Wet	1.3-6.7:   Wet	3.0-6.7: Wet	3.8-6.7: Wet	3.3-6.7: Wet	1.6-6.7: Wet	1.3-6.7:   Wet	2.1-6.7:   Wet

Map symbol Hydro-January February April July September October November December March May June August logic and component name group 383: 0.0: 0.0-1.6: D 0.0-2.5: 0.0-1.3: 0.0-0.5: 0.0-1.3: 0.0-2.1: 0.0-3.0: 0.0-2.5: 0.0-1.6: 0.0-1.3: Boash-----0.0-2.1: Moist Moist Moist Moist\* Moist Moist Moist Moist Moist Moist Moist Moist 1.3-6.7: 3.0-6.7: 2.5-6.7: 1.3-6.7: 1.6-6.7: 2.1-6.7: 2.5-6.7: 1.3-6.7: 0.0-6.7: 0.5-6.7: 2.1-6.7: 1.6-6.7: Wet Wet Wet Wet Wet Wet Wet Wet Wet Wet Wet Wet Strandquist---- B/D 0.0-3.0: 0.0-3.3: 0.0-2.1: 0.0-0.5: 0.0-0.8: 0.0-1.6: 0.0: 0.0: 0.0-3.3: 0.0-2.5: 0.0-1.6: 0.0-2.1: Dry\* Moist Moist Moist Moist Moist Moist Moist Dry\* Moist Moist Moist 3.0-6.7: 3.3-6.7: 2.1-6.7: 0.5-6.7: 0.8-6.7: 1.6-6.7: 0.0-3.3: 0.0-4.1: 3.3-6.7: 2.5-6.7: 1.6-6.7: 2.1-6.7: Wet Wet Wet Wet Wet Wet Wet Wet Moist Moist Wet Wet 3.3-6.7: 4.1-6.7: Wet Wet 0.0-1.6: 0.0-1.6: 0.0-0.3: 0.0-1.3: Haug----- B/D 0.0-2.5: 0.0: 0.0: 0.0: 0.0-0.5: 0.0-0.8: 0.0-1.3: 0.0-0.8: Moist Moist Moist Moist Moist Moist Moist Moist Moist Moist\* Moist\* Moist\* 1.6-6.7: 1.6-6.7: 2.5-6.7: 0.0-6.7: 0.0-6.7: 0.0-6.7: 0.5-6.7: 0.8-6.7: 1.3-6.7: 0.8-6.7: 0.3-6.7: 1.3-6.7: Wet Wet Wet Wet Wet Wet Wet Wet Wet Wet Wet Wet Skagen-----C 0.0-5.4: 0.0-5.9: 0.0-4.9: 0.0-2.5: 0.0-2.8: 0.0: 0.0-0.2: 0.0-0.2: 0.0: 0.0-4.3: 0.0-3.3: 0.0-4.6: Dry Moist Moist Moist Moist Dry\* Dry\* Moist Moist Moist Moist Dry 5.4-6.7: 5.9-6.7: 4.9-6.7: 2.5-6.7: 2.8-6.7: 0.0-3.1: 0.2-5.7: 0.2-6.7: 0.0-4.9: 4.3-6.7: 3.3-6.7: 4.6-6.7: Wet Wet Wet Wet Wet Moist Moist Moist Moist Wet Wet Wet 3.1-6.7: 5.7-6.7: 6.7: 4.9-6.7: Wet Wet Wet\* Wet 384: Percy, B/D 0.0-2.5: 0.0: 0.0: 0.0: 0.0-0.8: 0.0-1.6: 0.0-2.1: 0.0-1.6: 0.0-1.3: 0.0-0.5: 0.0-0.8: depressional---0.0-1.6: Moist Moist Moist\* Moist\* Moist\* Moist Moist Moist Moist Moist Moist Moist 1.6-6.7: 2.5-6.7: 0.0-6.7: 0.0-6.7: 0.0-6.7: 0.8-6.7: 1.6-6.7: 2.1-6.7: 1.6-6.7: 1.3-6.7: 0.5-6.7: 0.8-6.7: Wet Wet Wet Wet Wet Wet Wet Wet Wet Wet Wet Wet 0.0-1.3: Haug-----| B/D 0.0-1.6: 0.0-2.5: 0.0: 0.0: 0.0: 0.0-0.5: 0.0-0.8: 0.0-1.6: 0.0-1.3: 0.0-0.8: 0.0-0.3: Moist Moist Moist Moist Moist Moist Moist Moist Moist Moist\* Moist\* Moist\* 1.6-6.7: 2.5-6.7: 0.0-6.7: 0.0-6.7: 0.5-6.7: 0.8-6.7: 1.6-6.7: 1.3-6.7: 0.8-6.7: 0.3-6.7: 1.3-6.7: 0.0-6.7: Wet Wet Wet Wet Wet Wet Wet Wet Wet Wet Wet Wet 0.0-2.1: Percy----- B/D 0.0-3.0: 0.0-3.3: 0.0-2.1: 0.0-0.5: 0.0-3.8: 0.0-3.3: 0.0-1.6: 0.0-1.3: 0.0-0.8: 0.0-1.3: 0.0-3.0: Moist Moist Moist Moist Moist Moist Moist Moist Moist Moist Moist Moist 3.0-6.7: 3.3-6.7: 2.1-6.7: 0.5-6.7: 0.8-6.7: 1.3-6.7: 3.0-6.7: 3.8-6.7: 3.3-6.7: 1.6-6.7: 1.3-6.7: 2.1-6.7: Wet Wet Wet Wet Wet Wet Wet Wet Wet Wet Wet Wet

Table 26. -- Soil Moisture Status by Depth--Continued

See footnote at end of table.

D

0.0-2.1:

Moist

Wet

0.0-2.5:

Moist

Wet

2.1-6.7: |2.5-6.7:

0.0-1.3:

Moist

1.3-6.7:

Wet

0.0:

Moist\*

0.0-6.7:

Wet

0.0-0.5:

0.5-6.7:

Moist

Wet

0.0-1.3:

Moist

1.3-6.7:

Wet

0.0-2.1:

Moist

2.1-6.7:

Wet

0.0-3.0:

Moist

Wet

3.0-6.7:

0.0-2.5:

Moist

Wet

2.5-6.7:

0.0-1.6:

Moist

1.6-6.7:

Wet

0.0-1.3:

1.3-6.7:

Moist

Wet

0.0-1.6:

Moist

1.6-6.7:

Wet

Boash-----

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro-  logic  group	January 	February	March	April	May	June	July	August	September	October	November	Decembe
387:		 											
Roliss,		İ		i	i	i	i	i	i	i	ì	i	i
depressional	B/D	0.0-1.6:	0.0-2.5:	0.0:	0.0:	0.0:	0.0-0.8:	0.0-1.6:	0.0-2.1:	0.0-1.6:	0.0-1.3:	0.0-0.5:	0.0-0.8:
	-/-	Moist	Moist	Moist*	Moist*	Moist*	Moist	Moist	Moist	Moist	Moist	Moist	Moist
	i	1.6-6.7:	2.5-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.8-6.7:	1.6-6.7:	2.1-6.7:	1.6-6.7:	1.3-6.7:	0.5-6.7:	0.8-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Haug	   B/D	  0.0-1.6:	0.0-2.5:	0.0:	0.0:	0.0:	0.0-0.5:	0.0-0.8:	0.0-1.6:	0.0-1.3:	0.0-0.8:	0.0-0.3:	0.0-1.3:
3	i '	Moist	Moist	Moist*	Moist*	Moist*	Moist	Moist	Moist	Moist	Moist	Moist	Moist
	İ	1.6-6.7:	2.5-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.5-6.7:	0.8-6.7:	1.6-6.7:	1.3-6.7:	0.8-6.7:	0.3-6.7:	1.3-6.7:
	į	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Roliss	   B/D	  0.0-3.0:	0.0-3.3:	0.0-2.1:	0.0-0.5:	0.0-0.8:	0.0-1.3:	0.0-3.0:	0.0-3.8:	0.0-3.3:	0.0-1.6:	0.0-1.3:	0.0-2.1:
	İ	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist
	İ	3.0-6.7:	3.3-6.7:	2.1-6.7:	0.5-6.7:	0.8-6.7:	1.3-6.7:	3.0-6.7:	3.8-6.7:	3.3-6.7:	1.6-6.7:	1.3-6.7:	2.1-6.7:
	į	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
404:		 											
Chilgren	C	0.0-3.0:	0.0-3.3:	0.0-2.1:	0.0-0.5:	0.0-0.8:	0.0-1.3:	0.0-3.0:	0.0-3.8:	0.0-3.3:	0.0-1.6:	0.0-1.3:	0.0-2.1:
		Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist
		3.0-6.7:	3.3-6.7:	2.1-6.7:	0.5-6.7:	0.8-6.7:	1.3-6.7:	3.0-6.7:	3.8-6.7:	3.3-6.7:	1.6-6.7:	1.3-6.7:	2.1-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Garnes	В	0.0-5.4:	0.0-5.9:	0.0-4.9:	0.0-2.5:	0.0-2.8:	0.0:	0.0-0.2:	0.0-0.2:	0.0:	0.0-4.3:	0.0-3.3:	0.0-4.6:
		Moist	Moist	Moist	Moist	Moist	Dry*	Dry	Dry	Dry*	Moist	Moist	Moist
		5.4-6.7:	5.9-6.7:	4.9-6.7:	2.5-6.7:	2.8-6.7:	0.0-3.1:	0.2-5.7:	0.2-6.7:	0.0-4.9:	4.3-6.7:	3.3-6.7:	4.6-6.7:
		Wet	Wet	Wet	Wet	Wet	Moist	Moist	Moist	Moist	Wet	Wet	Wet
							3.1-6.7:	5.7-6.7:	6.7:	4.9-6.7:			
							Wet	Wet	Wet*	Wet			
Grygla	B/D	0.0-3.0:	0.0-3.3:	0.0-2.1:	0.0-0.5:	0.0-0.8:	0.0-1.6:	0.0-3.3:	0.0-4.1:	0.0-3.3:	0.0-2.5:	0.0-1.6:	0.0-2.1:
	ļ	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist
	ļ	3.0-6.7:	3.3-6.7:	2.1-6.7:	0.5-6.7:	0.8-6.7:	1.6-6.7:	3.3-6.7:	4.1-6.7:	3.3-6.7:	2.5-6.7:	1.6-6.7:	2.1-6.7:
	 	Wet 	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Haug	B/D	0.0-1.6:	0.0-2.5:	0.0:	0.0:	0.0:	0.0-0.5:	0.0-0.8:	0.0-1.6:	0.0-1.3:	0.0-0.8:	0.0-0.3:	0.0-1.3:
		Moist	Moist	Moist*	Moist*	Moist*	Moist	Moist	Moist	Moist	Moist	Moist	Moist
		1.6-6.7:   Wet	2.5-6.7: Wet	0.0-6.7:   Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.5-6.7: Wet	0.8-6.7: Wet	1.6-6.7:   Wet	1.3-6.7:   Wet	0.8-6.7: Wet	0.3-6.7: Wet	1.3-6.7:   Wet
	İ												
412:													
Mavie	B/D	0.0-3.0:	0.0-3.3:	0.0-2.1:	0.0-0.5:	0.0-0.8:	0.0-1.6:	0.0:	0.0:	0.0-3.3:	0.0-2.5:	0.0-1.6:	0.0-2.1:
		Moist	Moist	Moist	Moist	Moist	Moist	Dry*	Dry*	Moist	Moist	Moist	Moist
		3.0-6.7:	3.3-6.7:	2.1-6.7:	0.5-6.7:	0.8-6.7:	1.6-6.7:	0.0-3.3:	0.0-4.1:	3.3-6.7:	2.5-6.7:	1.6-6.7:	2.1-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Moist	Moist	Wet	Wet	Wet	Wet
		 						3.3-6.7:   Wet	4.1-6.7:   Wet				

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro-  logic  group	January 	February   	March   	April 	May   	June 	July	August   	September   	October   	November	December
412:		 											
Foxhome	   B	  0.0-5.4:	0.0-5.7:	0.0-4.6:	0.0-2.5:	0.0-3.0:	0.0:	0.0-0.2:	0.0-0.3:	0.0:	0.0-3.9:	0.0-3.3:	0.0-4.6:
1 OMITOMIC	-	Moist	Moist	Moist	Moist	Moist	Dry*	Dry	Dry	Dry*	Moist	Moist	Moist
	i	5.4-6.7:	5.7-6.7:	4.6-6.7:	2.5-6.7:	3.0-6.7:	0.0-3.6:	0.2-5.4:	0.3-6.7:	0.0-4.6:	3.9-6.7:	3.3-6.7:	4.6-6.7:
	i	Wet	Wet	Wet	Wet	Wet	Moist	Moist	Moist	Moist	Wet	Wet	Wet
	i						3.6-6.7:		6.7:	4.6-6.7:			
				į		į	Wet	Wet	Wet*	Wet	į	į	į
Northwood	   B/D	  0.0-1.6:	0.0-2.5:	  0.0:	0.0:	0.0:	0.0-0.5:	  0.0-0.8:	  0.0-1.6:	0.0-1.3:	0.0-0.8:	0.0-0.3:	0.0-1.3:
	-/-	Moist	Moist	Moist*	Moist*	Moist*	Moist	Moist	Moist	Moist	Moist	Moist	Moist
	i	1.6-6.7:	2.5-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.5-6.7:		1.6-6.7:	1.3-6.7:	0.8-6.7:	0.3-6.7:	1.3-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Percy, very	 	 		 									
cobbly	B/D	0.0-3.0:	0.0-3.3:	0.0-2.1:	0.0-0.5:	0.0-0.8:	0.0-1.3:	0.0-3.0:	0.0-3.8:	0.0-3.3:	0.0-1.6:	0.0-1.3:	0.0-2.1:
-	i	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist
	İ	3.0-6.7:	3.3-6.7:	2.1-6.7:	0.5-6.7:	0.8-6.7:	1.3-6.7:	3.0-6.7:	3.8-6.7:	3.3-6.7:	1.6-6.7:	1.3-6.7:	2.1-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
432:	 	 											
Strandquist	B/D	0.0-3.0:	0.0-3.3:	0.0-2.1:	0.0-0.5:	0.0-0.8:	0.0-1.6:	0.0:	0.0:	0.0-3.3:	0.0-2.5:	0.0-1.6:	0.0-2.1:
		Moist	Moist	Moist	Moist	Moist	Moist	Dry*	Dry*	Moist	Moist	Moist	Moist
		3.0-6.7:	3.3-6.7:	2.1-6.7:	0.5-6.7:	0.8-6.7:	1.6-6.7:	0.0-3.3:	0.0-4.1:	3.3-6.7:	2.5-6.7:	1.6-6.7:	2.1-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Moist	Moist	Wet	Wet	Wet	Wet
	 	 						3.3-6.7:   Wet	4.1-6.7:   Wet				
Percy, very		 											
cobbly	   B/D	0.0-3.0:	0.0-3.3:	0.0-2.1:	0.0-0.5:	0.0-0.8:	0.0-1.3:	0.0-3.0:	0.0-3.8:	0.0-3.3:	0.0-1.6:	0.0-1.3:	0.0-2.1:
CODDIA	2,2	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist
	i	3.0-6.7:	3.3-6.7:	2.1-6.7:	0.5-6.7:	0.8-6.7:	1.3-6.7:	3.0-6.7:	3.8-6.7:	3.3-6.7:	1.6-6.7:	1.3-6.7:	2.1-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Haug	   B/D	  0.0-1.6:	0.0-2.5:	0.0:	0.0:	0.0:	0.0-0.5:	0.0-0.8:	0.0-1.6:	0.0-1.3:	0.0-0.8:	0.0-0.3:	0.0-1.3:
•	i	Moist	Moist	Moist*	Moist*	Moist*	Moist	Moist	Moist	Moist	Moist	Moist	Moist
	İ	1.6-6.7:	2.5-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.5-6.7:	0.8-6.7:	1.6-6.7:	1.3-6.7:	0.8-6.7:	0.3-6.7:	1.3-6.7:
	į	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Boash	   D	  0.0-2.1:	0.0-2.5:	  0.0-1.3:	0.0:	0.0-0.5:	0.0-1.3:	0.0-2.1:	0.0-3.0:	0.0-2.5:	0.0-1.6:	0.0-1.3:	0.0-1.6:
		Moist	Moist	Moist	Moist*	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist
		2.1-6.7:	2.5-6.7:	1.3-6.7:	0.0-6.7:	0.5-6.7:	1.3-6.7:	2.1-6.7:	3.0-6.7:	2.5-6.7:	1.6-6.7:	1.3-6.7:	1.6-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet

Table 26.--Soil Moisture Status by Depth--Continued

and	Hydro- logic group	January   	February	March   	April	May 	June	July	August	September	October	November	Decembe
432:							 						
Foxhome	В	0.0-5.4:	0.0-5.7:	0.0-4.6:	0.0-2.5:	0.0-3.0:	0.0:	0.0-0.2:	0.0-0.3:	0.0:	0.0-3.9:	0.0-3.3:	0.0-4.6:
		Moist	Moist	Moist	Moist	Moist	Dry*	Dry	Dry	Dry*	Moist	Moist	Moist
		5.4-6.7:	5.7-6.7:	4.6-6.7:	2.5-6.7:	3.0-6.7:	0.0-3.6:	0.2-5.4:	0.3-6.7:	0.0-4.6:	3.9-6.7:	3.3-6.7:	4.6-6.7:
		Wet	Wet	Wet	Wet	Wet	Moist	Moist 5.4-6.7:	Moist  6.7:	Moist	Wet	Wet	Wet
							3.6-6.7:   Wet	5.4-6./:   Wet	Wet*	4.6-6.7:   Wet			
433:													
Syrene,													
depressional	B/D	0.0-1.6:	0.0-3.0:	0.0-0.5:	0.0:	0.0-0.5:	0.0-1.3:	0.0-2.1:	0.0-3.0:	1	0.0-1.6:	0.0-1.3:	0.0-1.6:
		Moist	Moist	Moist	Moist*	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist
		1.6-6.7:	3.0-6.7:	0.5-6.7:	0.0-6.7:	0.5-6.7:	1.3-6.7:	2.1-6.7:	3.0-6.7:	2.1-6.7:	1.6-6.7:	1.3-6.7:	1.6-6.7:
		Wet	Wet	Wet	Wet	Wet 	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Deerwood	B/D	0.0-1.6:	0.0-2.5:	0.0:	0.0:	0.0:	0.0-0.5:	0.0-0.8:	0.0-1.6:	0.0-1.3:	0.0-0.8:	0.0-0.3:	0.0-1.3:
		Moist	Moist	Moist*	Moist*	Moist*	Moist	Moist	Moist	Moist	Moist	Moist	Moist
		1.6-6.7:	2.5-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.5-6.7:	0.8-6.7:	1.6-6.7:	1.3-6.7:	0.8-6.7:	0.3-6.7:	1.3-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Rosewood	A/D	0.0-2.5:	0.0-3.3:	0.0-2.1:	0.0-0.5:	0.0-1.3:	0.0-1.6:	0.0:	0.0:	0.0-3.0:	0.0-2.1:	0.0-1.6:	0.0-2.1:
		Moist	Moist	Moist	Moist	Moist	Moist	Dry*	Dry*	Moist	Moist	Moist	Moist
		2.5-6.7:	3.3-6.7:	2.1-6.7:	0.5-6.7:	1.3-6.7:	1.6-6.7:	0.0-3.3:	0.0-4.9:	3.0-6.7:	2.1-6.7:	1.6-6.7:	2.1-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Moist	Moist	Wet	Wet	Wet	Wet
								3.3-6.7: Wet	4.9-6.7:   Wet				
Svrene	B/D	0.0-3.0:	0.0-3.3:	0.0-2.5:	0.0-0.3:	0.0-0.8:	  0.0-1.6:	0.0:	0.0:	0.0-2.5:	0.0-2.1:	  0.0-1.6:	0.0-2.1:
2720110		Moist	Moist	Moist	Moist	Moist	Moist	Dry*	Dry*	Moist	Moist	Moist	Moist
		3.0-6.7:	3.3-6.7:	2.5-6.7:	0.3-6.7:	0.8-6.7:	1.6-6.7:	0.0-2.5:	0.0-3.3:	2.5-6.7:	2.1-6.7:	1.6-6.7:	2.1-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Moist	Moist	Wet	Wet	Wet	Wet
		i	j		j	i		2.5-6.7: Wet	3.3-6.7: Wet	i	i	i	i
435:													
Syrene	B/D	0.0-3.0:	0.0-3.3:	0.0-2.5:	0.0-0.3:	0.0-0.8:	0.0-1.6:	0.0:	0.0:	0.0-2.5:	0.0-2.1:	0.0-1.6:	0.0-2.1:
-		Moist	Moist	Moist	Moist	Moist	Moist	Dry*	Dry*	Moist	Moist	Moist	Moist
j		3.0-6.7:	3.3-6.7:	2.5-6.7:	0.3-6.7:	0.8-6.7:	1.6-6.7:	0.0-2.5:	0.0-3.3:	2.5-6.7:	2.1-6.7:	1.6-6.7:	2.1-6.7:
İ		Wet	Wet	Wet	Wet	Wet	Wet	Moist	Moist	Wet	Wet	Wet	Wet
								2.5-6.7:	3.3-6.7:				
								Wet	Wet				

Table 26.--Soil Moisture Status by Depth--Continued

	Hydro-  logic  group	January   	February   	March   	April   	May   	June 	July   	August   	September   	October   	November	Decembe
	ļ		ļ									!	
435:													
Rosewood	A/D	0.0-2.5:	0.0-3.3:	0.0-2.1:	0.0-0.5:	0.0-1.3:	0.0-1.6:	0.0:	0.0:	0.0-3.0:	0.0-2.1:	0.0-1.6:	0.0-2.1:
		Moist	Moist	Moist	Moist	Moist	Moist	Dry*	Dry*	Moist	Moist	Moist	Moist
		2.5-6.7:	3.3-6.7:	2.1-6.7:	0.5-6.7:	1.3-6.7:	1.6-6.7:	0.0-3.3:	0.0-4.9:	3.0-6.7:	2.1-6.7:	1.6-6.7:	2.1-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Moist	Moist	Wet	Wet	Wet	Wet
	 	 						3.3-6.7:   Wet	4.9-6.7:   Wet				
Syrene,	 	 											
depressional	B/D	0.0-1.6:	0.0-3.0:	0.0-0.5:	0.0:	0.0-0.5:	0.0-1.3:	0.0-2.1:	0.0-3.0:	0.0-2.1:	0.0-1.6:	0.0-1.3:	0.0-1.6:
		Moist	Moist	Moist	Moist*	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist
		1.6-6.7:	3.0-6.7:	0.5-6.7:	0.0-6.7:	0.5-6.7:	1.3-6.7:	2.1-6.7:	3.0-6.7:	2.1-6.7:	1.6-6.7:	1.3-6.7:	1.6-6.7:
	 	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Karlsruhe	A	0.0-3.3:	0.0-4.1:	0.0-3.3:	0.0-2.0:	0.0-2.5:	0.0-3.0:	0.0:	0.0-0.2:	0.0:	0.0-4.3:	0.0-2.5:	0.0-3.0:
		Moist	Moist	Moist	Moist	Moist	Moist	Dry*	Dry	Dry*	Moist	Moist	Moist
		3.3-6.7:	4.1-6.7:	3.3-6.7:	2.0-6.7:	2.5-6.7:	3.0-6.7:	0.0-3.6:	0.2-6.7:	0.0-4.1:	4.3-6.7:	2.5-6.7:	3.0-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Moist	Moist	Moist	Wet	Wet	Wet
								3.6-6.7:	6.7:	4.1-6.7:			
	 	 						Wet	Wet*	Wet			
Deerwood	B/D	0.0-1.6:	0.0-2.5:	0.0:	0.0:	0.0:	0.0-0.5:	0.0-0.8:	0.0-1.6:	0.0-1.3:	0.0-0.8:	0.0-0.3:	0.0-1.3:
		Moist	Moist	Moist*	Moist*	Moist*	Moist	Moist	Moist	Moist	Moist	Moist	Moist
		1.6-6.7:	2.5-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.5-6.7:	0.8-6.7:	1.6-6.7:	1.3-6.7:	0.8-6.7:	0.3-6.7:	1.3-6.7:
	 	Wet 	Wet	Wet 	Wet 	Wet	Wet	Wet 	Wet 	Wet	Wet	Wet	Wet
439:	į .	İ	İ	į	į.	į.		İ	į		į.	į	į
Strathcona	B/D	0.0-3.0:	1	0.0-2.1:	0.0-0.5:	0.0-0.8:	0.0-1.6:	0.0-3.3:	0.0-4.1:	0.0-3.3:	0.0-2.5:	0.0-1.6:	0.0-2.1:
		Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist
	l I	3.0-6.7:   Wet	3.3-6.7:   Wet	2.1-6.7:   Wet	0.5-6.7:	0.8-6.7: Wet	1.6-6.7:   Wet	3.3-6.7:   Wet	4.1-6.7:   Wet	3.3-6.7:   Wet	2.5-6.7: Wet	1.6-6.7:   Wet	2.1-6.7:   Wet
					""	""	Wet		""	"60		"""	
Northwood	B/D	0.0-1.6:	0.0-2.5:	0.0:	0.0:	0.0:	0.0-0.5:	0.0-0.8:	0.0-1.6:	0.0-1.3:	0.0-0.8:	0.0-0.3:	0.0-1.3:
		Moist	Moist	Moist*	Moist*	Moist*	Moist	Moist	Moist	Moist	Moist	Moist	Moist
		1.6-6.7:	2.5-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.5-6.7:	0.8-6.7:	1.6-6.7:	1.3-6.7:	0.8-6.7:	0.3-6.7:	1.3-6.7:
	 	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Percy	B/D	0.0-3.0:	0.0-3.3:	0.0-2.1:	0.0-0.5:	0.0-0.8:	0.0-1.3:	0.0-3.0:	0.0-3.8:	0.0-3.3:	0.0-1.6:	0.0-1.3:	0.0-2.1:
		Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist
		3.0-6.7:	3.3-6.7:	2.1-6.7:	0.5-6.7:	0.8-6.7:	1.3-6.7:	3.0-6.7:	3.8-6.7:	3.3-6.7:	1.6-6.7:	1.3-6.7:	2.1-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet

Table 26.--Soil Moisture Status by Depth--Continued

	Hydro-  logic  group	January   	February	March   	April	May   	June	July   	August	September	October	November	December
439:					i	i	i	i		i	i	i	
Grimstad	   B 	0.0-3.8:   Moist  3.8-6.7:	0.0-4.6:   Moist  4.6-6.7:	0.0-3.0:   Moist  3.0-6.7:	0.0-1.5:   Moist  1.5-6.7:	0.0-1.8:   Moist  1.8-6.7:	0.0-3.3:   Moist  3.3-6.7:	0.0-0.2:   Dry  0.2-5.7:	0.0-0.2:   Dry  0.2-6.7:	0.0:   Dry*  0.0-3.8:	0.0-3.0:   Moist  3.0-6.7:	0.0-2.5:   Moist  2.5-6.7:	0.0-3.3:   Moist  3.3-6.7:
	   	Wet   	Wet 	Wet   	Wet 	Wet 	Wet 	Moist  5.7-6.7:   Wet	Moist 	Moist  3.8-6.7:   Wet	Wet 	Wet 	Wet 
Strandquist	   B/D       	  0.0-3.0:   Moist  3.0-6.7:   Wet 	0.0-3.3:   Moist   3.3-6.7:   Wet 	  0.0-2.1:   Moist  2.1-6.7:   Wet 	0.0-0.5:   Moist   0.5-6.7:   Wet 	0.0-0.8:   Moist   0.8-6.7:   Wet 	0.0-1.6:   Moist   1.6-6.7:   Wet 	0.0:   Dry*  0.0-3.3:   Moist  3.3-6.7:   Wet	0.0:   Dry*  0.0-4.1:   Moist  4.1-6.7:   Wet	0.0-3.3:   Moist   3.3-6.7:   Wet 		0.0-1.6:   Moist  1.6-6.7:   Wet 	  0.0-2.1:   Moist  2.1-6.7:   Wet 
481:	l I	I I								i i	İ		
Kratka	B/D     	0.0-3.0:   Moist  3.0-6.7:   Wet	0.0-3.3:   Moist  3.3-6.7:   Wet	0.0-2.1:   Moist  2.1-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-3.3:   Moist  3.3-6.7:   Wet	0.0-4.1:   Moist  4.1-6.7:   Wet	0.0-3.3:   Moist  3.3-6.7:   Wet	0.0-2.5:   Moist  2.5-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-2.1:   Moist  2.1-6.7:   Wet
Northwood	   B/D     	  0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-2.5:   Moist   2.5-6.7:   Wet	  0.0:   Moist*  0.0-6.7:   Wet	  0.0:   Moist*  0.0-6.7:   Wet	  0.0:   Moist*  0.0-6.7:   Wet		  0.0-0.8:   Moist  0.8-6.7:   Wet	  0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	  0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-0.3:   Moist   0.3-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet
Percy	   B/D     	  0.0-3.0:   Moist  3.0-6.7:   Wet	0.0-3.3:   Moist  3.3-6.7:   Wet	0.0-2.1:   Moist   2.1-6.7:   Wet	0.0-0.5:   Moist   0.5-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-3.0:   Moist  3.0-6.7:   Wet	0.0-3.8:   Moist   3.8-6.7:   Wet	0.0-3.3:   Moist  3.3-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-2.1:   Moist  2.1-6.7:   Wet
Enstrom	   B     	0.0-5.4:   Moist  5.4-6.7:   Wet 	0.0-5.7:   Moist  5.7-6.7:   Wet 	0.0-4.6:   Moist  4.6-6.7:   Wet 	0.0-2.5:   Moist  2.5-6.7:   Wet 	0.0-3.1:   Moist  3.1-6.7:   Wet 	0.0-0.1:   Dry   0.1-3.8:   Moist   3.8-6.7:   Wet	0.0-0.2:   Dry   0.2-4.9:   Moist   4.9-6.7:   Wet	0.0-0.3:   Dry  0.3-6.7:   Moist  6.7:   Wet*	0.0:   Dry*  0.0-4.1:   Moist  4.1-6.7:   Wet	0.0-3.8:   Moist   3.8-6.7:   Wet 	0.0-3.3:   Moist  3.3-6.7:   Wet	0.0-4.1:   Moist  4.1-6.7:   Wet 
Strandquist	   B/D       	  0.0-3.0:   Moist  3.0-6.7:   Wet 	0.0-3.3:   Moist   3.3-6.7:   Wet 	  0.0-2.1:   Moist  2.1-6.7:   Wet 	0.0-0.5:   Moist   0.5-6.7:   Wet 	0.0-0.8:   Moist   0.8-6.7:   Wet 	0.0-1.6:   Moist  1.6-6.7:   Wet 	0.0:   Dry*  0.0-3.3:   Moist  3.3-6.7:	  0.0:   Dry*  0.0-4.1:   Moist  4.1-6.7:   Wet	0.0-3.3:   Moist   3.3-6.7:   Wet 	  0.0-2.5:   Moist  2.5-6.7:   Wet 	0.0-1.6:   Moist   1.6-6.7:   Wet 	0.0-2.1:   Moist   2.1-6.7:   Wet 

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro-  logic  group	January   	February	March   	April	May	June	July   	August   	September	October	November	December
482:						1					1		
Grygla	i '	0.0-3.0:   Moist  3.0-6.7:   Wet	0.0-3.3:   Moist   3.3-6.7:   Wet	0.0-2.1:   Moist  2.1-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-3.3:   Moist  3.3-6.7:   Wet	0.0-4.1:   Moist  4.1-6.7:   Wet	0.0-3.3:   Moist  3.3-6.7:   Wet	0.0-2.5:   Moist  2.5-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-2.1:   Moist  2.1-6.7:   Wet
Chilgren	İ	  0.0-3.0:   Moist  3.0-6.7:   Wet	0.0-3.3:   Moist   3.3-6.7:   Wet	  0.0-2.1:   Moist  2.1-6.7:   Wet	  0.0-0.5:   Moist  0.5-6.7:   Wet	  0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-3.0:   Moist   3.0-6.7:   Wet	  0.0-3.8:   Moist  3.8-6.7:   Wet		  0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist   1.3-6.7:   Wet	  0.0-2.1:   Moist  2.1-6.7:   Wet
Grygla,		 			i	i		1	i	i			
depressional	İ	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-3.0:   Moist   3.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-2.5:   Moist  2.5-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist   1.3-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.3:   Moist   1.3-6.7:   Wet
Enstrom	İ	0.0-5.4:   Moist   5.4-6.7:   Wet 	0.0-5.7:   Moist   5.7-6.7:   Wet 	  0.0-4.6:   Moist  4.6-6.7:   Wet 	0.0-2.5:   Moist  2.5-6.7:   Wet 	0.0-3.1:   Moist  3.1-6.7:   Wet 	0.0-0.1:   Dry   0.1-3.8:   Moist   3.8-6.7:   Wet	0.0-0.2:   Dry   0.2-4.9:   Moist   4.9-6.7:   Wet	0.0-0.3:   Dry   0.3-6.7:   Moist   6.7:   Wet*	0.0:   Dry*   0.0-4.1:   Moist   4.1-6.7:   Wet	0.0-3.8:   Moist   3.8-6.7:   Wet 	0.0-3.3:   Moist   3.3-6.7:   Wet 	
Northwood	i '	  0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-2.5:   Moist  2.5-6.7:   Wet	  0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.5:   Moist   0.5-6.7:   Wet	0.0-0.8:   Moist   0.8-6.7:   Wet	  0.0-1.6:   Moist  1.6-6.7:   Wet	  0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-0.8:   Moist   0.8-6.7:   Wet	0.0-0.3:   Moist   0.3-6.7:   Wet	  0.0-1.3:   Moist  1.3-6.7:   Wet
532:						1					1		
Sago	İ	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-2.5:   Moist   2.5-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-0.8:   Moist   0.8-6.7:   Wet	0.0-0.3:   Moist   0.3-6.7:   Wet	0.0-1.3:   Moist   1.3-6.7:   Wet
Cathro	i '	  0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-2.1:   Moist  2.1-6.7:   Wet	  0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*   0.0-6.7:   Wet	0.0-0.8:   Moist   0.8-6.7:   Wet	0.0-1.6:   Moist   1.6-6.7:   Wet	0.0-1.1:   Moist  1.1-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.3:   Moist  0.3-6.7:   Wet	  0.0-0.8:   Moist  0.8-6.7:   Wet
Zippel	i '	  0.0-3.0:   Moist  3.0-6.7:   Wet	0.0-3.3:   Moist   3.3-6.7:	  0.0-2.1:   Moist  2.1-6.7:   Wet	  0.0-0.5:   Moist  0.5-6.7:   Wet		  0.0-1.3:   Moist  1.3-6.7:   Wet				  0.0-1.6:   Moist  1.6-6.7:   Wet		  0.0-2.1:   Moist  2.1-6.7:   Wet

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and	Hydro-  logic	January	February	March	April	May	June	July 	August	September	October	November	Decembe
component name	group			1	1		1			1	1	1	
534:													
Mooselake	A/D	0.0-1.0:	0.0-1.6:	0.0:	0.0:	0.0:	0.0-0.5:	0.0-0.8:	0.0-1.6:	0.0-1.1:	0.0-0.5:	0.0-0.3:	0.0-0.8:
		Moist  1.0-6.7:	Moist  1.6-6.7:	Moist*  0.0-6.7:	Moist*	Moist*  0.0-6.7:	Moist  0.5-6.7:	Moist  0.8-6.7:	Moist  1.6-6.7:	Moist  1.1-6.7:	Moist  0.5-6.7:	Moist  0.3-6.7:	Moist  0.8-6.7:
	l I	1.0-6.7:   Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
	l I	Wec	Wec	Wet	Wet	Wec	Wet	Wet	Wec	Wec	Wet	Wec	Wet
Bullwinkle	ן D	0.0-1.3:	0.0-2.1:	0.0:	0.0:	0.0:	0.0-0.5:	0.0-0.8:	0.0-1.6:	0.0-1.1:	0.0-0.5:	0.0-0.3:	0.0-0.8:
	İ	Moist	Moist	Moist*	Moist*	Moist*	Moist	Moist	Moist	Moist	Moist	Moist	Moist
	İ	1.3-6.7:	2.5-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.5-6.7:	0.8-6.7:	1.6-6.7:	1.1-6.7:	0.5-6.7:	0.3-6.7:	0.8-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
_	- /-												
Dora	B/D	0.0-1.3:   Moist	0.0-2.1:   Moist	0.0:   Moist*	0.0:   Moist*	0.0:   Moist*	0.0-0.5: Moist	0.0-0.8:   Moist	0.0-1.6:   Moist	0.0-1.1:   Moist	0.0-0.5: Moist	0.0-0.3: Moist	0.0-0.8:   Moist
	l I	1.3-6.7:	2.5-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.5-6.7:	0.8-6.7:	1.6-6.7:	1.1-6.7:	0.5-6.7:	0.3-6.7:	0.8-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
	İ											1	
Tawas	A/D	0.0-1.3:	0.0-2.1:	0.0:	0.0:	0.0:	0.0-0.5:	0.0-0.8:	0.0-1.6:	0.0-1.1:	0.0-0.5:	0.0-0.3:	0.0-0.8:
	İ	Moist	Moist	Moist*	Moist*	Moist*	Moist	Moist	Moist	Moist	Moist	Moist	Moist
		1.3-6.7:	2.5-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.5-6.7:	0.8-6.7:	1.6-6.7:	1.1-6.7:	0.5-6.7:	0.3-6.7:	0.8-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
540:	 	 		 		1						1	
Seelyeville	A/D	0.0-1.0:	0.0-1.6:	0.0:	0.0:	0.0:	0.0-0.3:	0.0-0.8:	0.0-1.6:	0.0-1.1:	0.0-0.5:	0.0-0.3:	0.0-0.8:
-	İ	Moist	Moist	Moist*	Moist*	Moist*	Moist	Moist	Moist	Moist	Moist	Moist	Moist
	İ	1.0-6.7:	1.6-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.3-6.7:	0.8-6.7:	1.6-6.7:	1.1-6.7:	0.5-6.7:	0.3-6.7:	0.8-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Cathro	   a/n	  0.0-1.3:	0.0-2.1:	0.0:	0.0:	0.0:	0.0:	0.0-0.8:	0.0-1.6:	0.0-1.1:	0.0-0.5:	0.0-0.3:	0.0-0.8:
Cuciiio	11,2	Moist	Moist	Moist*	Moist*	Moist*	Moist*	Moist	Moist	Moist	Moist	Moist	Moist
	İ	1.3-6.7:	2.1-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.8-6.7:	1.6-6.7:	1.1-6.7:	0.5-6.7:	0.3-6.7:	0.8-6.7:
	İ	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
_		  0.0-1.3:		  0.0:									0.0-0.8:
Dora	в/р	0.0-1.3:   Moist	0.0-2.1:   Moist	0.0:   Moist*	0.0:   Moist*	0.0:   Moist*	0.0:   Moist*	0.0-0.8:   Moist	0.0-1.6:   Moist	0.0-1.1:   Moist	0.0-0.5: Moist	0.0-0.3: Moist	0.0-0.8:
	l I	1.3-6.7:	2.1-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.8-6.7:	1.6-6.7:	1.1-6.7:	0.5-6.7:	0.3-6.7:	0.8-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
	İ		İ	İ	İ	İ	İ	İ	İ	İ	İ	İ	İ
Markey	A/D	0.0-1.3:	0.0-2.1:	0.0:	0.0:	0.0:	0.0:	0.0-0.8:	0.0-1.6:	0.0-1.1:	0.0-0.5:	0.0-0.3:	0.0-0.8:
		Moist	Moist	Moist*	Moist*	Moist*	Moist*	Moist	Moist	Moist	Moist	Moist	Moist
		1.3-6.7:	2.1-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.8-6.7:	1.6-6.7:	1.1-6.7:	0.5-6.7:	0.3-6.7:	0.8-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet

Table 26.--Soil Moisture Status by Depth--Continued

and	Hydro-  logic  group	January	February	March	April	May	June	July	August	September	October	November	Decembe
541:				 									
Rifle	   A/D 	0.0-1.0: Moist	0.0-1.6:   Moist	0.0:   Moist*	0.0:   Moist*	0.0:   Moist*	0.0-0.3:   Moist	0.0-0.8:   Moist	0.0-1.6:   Moist	0.0-1.1:   Moist	0.0-0.5:   Moist	0.0-0.3:   Moist	0.0-0.8:
	 	1.0-6.7: Wet	1.6-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.3-6.7: Wet	0.8-6.7: Wet	1.6-6.7: Wet	1.1-6.7: Wet	0.5-6.7: Wet	0.3-6.7: Wet	0.8-6.7: Wet
Tacoosh	   B/D	0.0-1.3:	0.0-2.1:	0.0:	0.0:	0.0:	0.0:	0.0-0.8:	0.0-1.6:	0.0-1.1:	0.0-0.5:	0.0-0.3:	0.0-0.8:
	   	Moist  1.3-6.7:   Wet	Moist  2.1-6.7:   Wet	Moist*  0.0-6.7:   Wet	Moist*  0.0-6.7:   Wet	Moist*  0.0-6.7:   Wet	Moist*  0.0-6.7:   Wet	Moist  0.8-6.7:   Wet	Moist  1.6-6.7:   Wet	Moist  1.1-6.7:   Wet	Moist  0.5-6.7:   Wet	Moist  0.3-6.7:   Wet	Moist  0.8-6.7:   Wet
- 4 -	 	wet	wet	wet	wet	wet	wet	wet	wet	wet	wet	wet	wet
543: Markey	7.70	  0.0-1.3:	0.0-2.1:	0.0:	0.0:	0.0:	0.0:	0.0-0.8:	0.0-1.6:	0.0-1.1:	0.0-0.5:	0.0-0.3:	0.0-0.8:
markey	A/D 	Moist	0.0-2.1:   Moist	Moist*	Moist*	Moist*	Moist*	0.0-0.8:   Moist	0.0-1.6:   Moist	Moist	Moist	Moist	Moist
	 	1.3-6.7:	2.1-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.8-6.7:	1.6-6.7:	1.1-6.7:	0.5-6.7:	0.3-6.7:	0.8-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Cormant	A/D	0.0-2.5:	1	0.0-2.1:	0.0-0.5:	0.0-1.3:	0.0-1.6:	0.0:	0.0:	0.0-3.0:	0.0-2.1:	0.0-1.6:	0.0-2.1:
		Moist	Moist	Moist	Moist	Moist	Moist	Dry*	Dry*	Moist	Moist	Moist	Moist
	 	2.5-6.7: Wet	3.3-6.7:   Wet	2.1-6.7:   Wet	0.5-6.7: Wet	1.3-6.7:   Wet	1.6-6.7:   Wet	0.0-3.3: Moist	0.0-4.9:   Moist	3.0-6.7:   Wet	2.1-6.7:   Wet	1.6-6.7:   Wet	2.1-6.7:   Wet
	   	 		 	 			3.3-6.7:   Wet	4.9-6.7:   Wet	 	 	 	 
Seelyeville	   A/D	  0.0-1.0:	  0.0-1.6:	  0.0:	0.0:	0.0:	0.0-0.3:	0.0-0.8:	0.0-1.6:	0.0-1.1:	  0.0-0.5:	0.0-0.3:	0.0-0.8:
	ĺ	Moist	Moist	Moist*	Moist*	Moist*	Moist	Moist	Moist	Moist	Moist	Moist	Moist
	 	1.0-6.7: Wet	1.6-6.7:   Wet	0.0-6.7: Wet	0.0-6.7:   Wet	0.0-6.7:   Wet	0.3-6.7: Wet	0.8-6.7:   Wet	1.6-6.7:   Wet	1.1-6.7:   Wet	0.5-6.7:   Wet	0.3-6.7: Wet	0.8-6.7:   Wet
544:	 			 									
Cathro	A/D	0.0-1.3: Moist	0.0-2.1:   Moist	0.0:   Moist*	0.0:   Moist*	0.0:   Moist*	0.0:   Moist*	0.0-0.8: Moist	0.0-1.6: Moist	0.0-1.1: Moist	0.0-0.5: Moist	0.0-0.3: Moist	0.0-0.8:
	l I	MOIST  1.3-6.7:	2.1-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.8-6.7:	1.6-6.7:	1.1-6.7:	0.5-6.7:	0.3-6.7:	0.8-6.7:
	 	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Percy, very	 												
cobbly	B/D	0.0-3.0:	0.0-3.3:	0.0-2.1:	0.0-0.5:	0.0-0.8:	0.0-1.3:	0.0-3.0:	0.0-3.8:	0.0-3.3:	0.0-1.6:	0.0-1.3:	0.0-2.1:
		Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist
	 	3.0-6.7: Wet	3.3-6.7: Wet	2.1-6.7:   Wet	0.5-6.7:   Wet	0.8-6.7: Wet	1.3-6.7:   Wet	3.0-6.7:   Wet	3.8-6.7:   Wet	3.3-6.7:   Wet	1.6-6.7:   Wet	1.3-6.7:   Wet	2.1-6.7:   Wet
Grygla	   B/D	0.0-3.0:	0.0-3.3:	  0.0-2.1:	0.0-0.5:	0.0-0.8:	0.0-1.6:	0.0-3.3:	0.0-4.1:	0.0-3.3:	  0.0-2.5:	  0.0-1.6:	0.0-2.1:
		Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist
		3.0-6.7:	3.3-6.7:	2.1-6.7:	0.5-6.7:	0.8-6.7:	1.6-6.7:	3.3-6.7:	4.1-6.7:	3.3-6.7:	2.5-6.7:	1.6-6.7:	2.1-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January	February	March	April	May	June	July	August	September	October	November	December
544:	 	 					1				1	}	1
Seelyeville	A/D     	0.0-1.0:   Moist  1.0-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.3:   Moist  0.3-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.1:   Moist  1.1-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.3:   Moist  0.3-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet
546:		 									1		
Lupton	A/D     	0.0-1.0:   Moist  1.0-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.1:   Moist  1.1-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.3:   Moist  0.3-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet
Bullwinkle	   D   	  0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-2.1:   Moist  2.5-6.7:   Wet	0.0:   Moist*   0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.1:   Moist  1.1-6.7:   Wet	0.0-0.5:   Moist   0.5-6.7:   Wet	0.0-0.3:   Moist  0.3-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet
Dora	   B/D     	  0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-2.1:   Moist  2.5-6.7:   Wet	  0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*   0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.5:   Moist   0.5-6.7:   Wet	0.0-0.8:   Moist   0.8-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.1:   Moist  1.1-6.7:   Wet	  0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.3:   Moist  0.3-6.7:   Wet	0.0-0.8:   Moist   0.8-6.7:   Wet
Tawas	   A/D     	  0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-2.1:   Moist  2.5-6.7:   Wet	  0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*   0.0-6.7:   Wet	0.0-0.5:   Moist   0.5-6.7:   Wet	0.0-0.8:   Moist   0.8-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.1:   Moist  1.1-6.7:   Wet	  0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.3:   Moist  0.3-6.7:   Wet	0.0-0.8:   Moist   0.8-6.7:   Wet
547:	 	 					1				1		1
Deerwood	B/D     	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-2.5:   Moist  2.5-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-0.8:   Moist   0.8-6.7:   Wet	0.0-0.3:   Moist  0.3-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet
Markey	A/D       	  0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-2.1:   Moist  2.1-6.7:   Wet	0.0:   Moist*   0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.1:   Moist  1.1-6.7:   Wet	0.0-0.5:   Moist   0.5-6.7:   Wet	0.0-0.3:   Moist  0.3-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet
Rosewood	   A/D       	  0.0-2.5:   Moist  2.5-6.7:   Wet 	0.0-3.3:   Moist   3.3-6.7:   Wet 	  0.0-2.1:   Moist  2.1-6.7:   Wet 	0.0-0.5:   Moist   0.5-6.7:   Wet 	0.0-1.3:   Moist  1.3-6.7:   Wet 	0.0-1.6:   Moist  1.6-6.7:   Wet 	0.0:   Dry*   0.0-3.3:   Moist   3.3-6.7:   Wet	0.0:   Dry*   0.0-4.9:   Moist   4.9-6.7:   Wet	0.0-3.0:   Moist   3.0-6.7:   Wet 	  0.0-2.1:   Moist  2.1-6.7:   Wet 	0.0-1.6:   Moist   1.6-6.7:   Wet	0.0-2.1:   Moist  2.1-6.7:   Wet

Table 26.--Soil Moisture Status by Depth--Continued

and	Hydro-	January	February	March	April	May	June	July	August	September	October	November	Decembe
component name	group		<u> </u>							1	<u> </u>	<u> </u>	
547:												-	
Syrene	   B/D	0.0-3.0:	0.0-3.3:	0.0-2.5:	0.0-0.3:	0.0-0.8:	0.0-1.6:	0.0:	0.0:	0.0-2.5:	0.0-2.1:	0.0-1.6:	0.0-2.1:
2720110	2,2	Moist	Moist	Moist	Moist	Moist	Moist	Dry*	Dry*	Moist	Moist	Moist	Moist
	i	3.0-6.7:	3.3-6.7:	2.5-6.7:	0.3-6.7:	0.8-6.7:	1.6-6.7:	0.0-2.5:	0.0-3.3:	2.5-6.7:	2.1-6.7:	1.6-6.7:	2.1-6.7:
	i	Wet	Wet	Wet	Wet	Wet	Wet	Moist	Moist	Wet	Wet	Wet	Wet
	i			i	i	i	i	2.5-6.7:	3.3-6.7:	i	j	i	i
	į	İ	İ	į	į	İ	j	Wet	Wet	İ	į	İ	j
550:		 											
Dora	B/D	0.0-1.3:	0.0-2.1:	0.0:	0.0:	0.0:	0.0:	0.0-0.8:	0.0-1.6:	0.0-1.1:	0.0-0.5:	0.0-0.3:	0.0-0.8:
	i '	Moist	Moist	Moist*	Moist*	Moist*	Moist*	Moist	Moist	Moist	Moist	Moist	Moist
	i	1.3-6.7:	2.1-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.8-6.7:	1.6-6.7:	1.1-6.7:	0.5-6.7:	0.3-6.7:	0.8-6.7:
	į	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Boash	   D	  0.0-2.1:	0.0-2.5:	  0.0-1.3:	0.0:	0.0-0.5:	0.0-1.3:	0.0-2.1:	0.0-3.0:	0.0-2.5:	0.0-1.6:	0.0-1.3:	0.0-1.6:
Doasii	5	Moist	Moist	Moist	Moist*	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist
	i	2.1-6.7:		1.3-6.7:	0.0-6.7:	0.5-6.7:	1.3-6.7:	2.1-6.7:	3.0-6.7:	2.5-6.7:	1.6-6.7:	1.3-6.7:	1.6-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Seelyeville	A/D	0.0-1.0:   Moist	0.0-1.6:   Moist	0.0:   Moist*	0.0:   Moist*	0.0:   Moist*	0.0-0.3:   Moist	0.0-0.8:   Moist	0.0-1.6:   Moist	0.0-1.1:   Moist	0.0-0.5: Moist	0.0-0.3:   Moist	0.0-0.8:   Moist
	 	1.0-6.7:	1.6-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.3-6.7:	0.8-6.7:	1.6-6.7:	1.1-6.7:	0.5-6.7:	0.3-6.7:	0.8-6.7:
	 	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
	İ							i		i		į	
Woodslake	D	0.0-1.3:	1	0.0:	0.0:	0.0:	0.0-0.5:	0.0-1.3:	0.0-1.6:	0.0-1.3:	0.0-0.8:	0.0-0.5:	0.0-0.8:
	!	Moist	Moist	Moist*	Moist*	Moist*	Moist	Moist	Moist	Moist	Moist	Moist	Moist
		1.3-6.7:	1.6-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.5-6.7:	1.3-6.7:	1.6-6.7:	1.3-6.7:	0.8-6.7:	0.5-6.7:	0.8-6.7:
		Wet 	Wet	Wet 	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
561:	i	İ		İ	į	į	İ		İ		į	į	İ
Bullwinkle	D	0.0-1.3:	1	0.0:	0.0:	0.0:	0.0-0.5:	0.0-0.8:	0.0-1.6:	0.0-1.1:	0.0-0.5:	0.0-0.3:	0.0-0.8:
		Moist	Moist	Moist*	Moist*	Moist*	Moist	Moist	Moist	Moist	Moist	Moist	Moist
		1.3-6.7:   Wet	2.5-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.5-6.7: Wet	0.8-6.7:   Wet	1.6-6.7:   Wet	1.1-6.7:   Wet	0.5-6.7: Wet	0.3-6.7: Wet	0.8-6.7:
		wet	wet	wet	wet	wet	wet	Wet	Wet	wet	wet	wet	wet
Lupton	A/D	0.0-1.0:	1	0.0:	0.0:	0.0:	0.0-0.5:	0.0-0.8:	0.0-1.6:	0.0-1.1:	0.0-0.5:	0.0-0.3:	0.0-0.8:
		Moist	Moist	Moist*	Moist*	Moist*	Moist	Moist	Moist	Moist	Moist	Moist	Moist
		1.0-6.7:	1.6-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.5-6.7:	0.8-6.7:	1.6-6.7:	1.1-6.7:	0.5-6.7:	0.3-6.7:	0.8-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Northwood,		 											
wooded	B/D	0.0-1.6:	0.0-2.5:	0.0:	0.0:	0.0:	0.0-0.5:	0.0-0.8:	0.0-1.6:	0.0-1.3:	0.0-0.8:	0.0-0.3:	0.0-1.3:
		Moist	Moist	Moist*	Moist*	Moist*	Moist	Moist	Moist	Moist	Moist	Moist	Moist
		1.6-6.7:	2.5-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.5-6.7:	0.8-6.7:	1.6-6.7:	1.3-6.7:	0.8-6.7:	0.3-6.7:	1.3-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro-  logic  group	January   	February	March 	April	May	June	July	August	September	October	November	Decembe
561:		[											
Chilgren	   c 	0.0-3.0:   Moist   3.0-6.7:   Wet	0.0-3.3:   Moist  3.3-6.7:	0.0-2.1:   Moist   2.1-6.7:   Wet	0.0-0.5:   Moist   0.5-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.3:   Moist   1.3-6.7:   Wet	0.0-3.0:   Moist   3.0-6.7:   Wet	0.0-3.8:   Moist  3.8-6.7:   Wet	0.0-3.3:   Moist  3.3-6.7:	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:	0.0-2.1:   Moist   2.1-6.7:   Wet
		WEC	Wet		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	
563:					1				1				
Northwood	B/D	0.0-1.6: Moist	0.0-2.5: Moist	0.0:   Moist*	0.0: Moist*	0.0: Moist*	0.0-0.5: Moist	0.0-0.8: Moist	0.0-1.6:   Moist	0.0-1.3:   Moist	0.0-0.8:   Moist	0.0-0.3:   Moist	0.0-1.3:   Moist
		1.6-6.7:	2.5-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.5-6.7:	0.8-6.7:	1.6-6.7:	1.3-6.7:	0.8-6.7:	0.3-6.7:	1.3-6.7:
	į	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Grygla	   B/D	  0.0-3.0:	0.0-3.3:	  0.0-2.1:	0.0-0.5:	0.0-0.8:	0.0-1.6:	0.0-3.3:	0.0-4.1:	0.0-3.3:	0.0-2.5:	0.0-1.6:	0.0-2.1:
13	i '	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist
	İ	3.0-6.7:	3.3-6.7:	2.1-6.7:	0.5-6.7:	0.8-6.7:	1.6-6.7:	3.3-6.7:	4.1-6.7:	3.3-6.7:	2.5-6.7:	1.6-6.7:	2.1-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Berner	A/D	0.0-1.3:	0.0-2.1:	0.0:	0.0:	0.0:	0.0:	0.0-0.8:	0.0-1.6:	0.0-1.1:	0.0-0.5:	0.0-0.3:	0.0-0.8:
		Moist	Moist	Moist*	Moist*	Moist*	Moist*	Moist	Moist	Moist	Moist	Moist	Moist
		1.3-6.7:	2.1-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.8-6.7:	1.6-6.7:	1.1-6.7:	0.5-6.7:	0.3-6.7:	0.8-6.7:
	 	Wet 	Wet	Wet 	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Strandquist	B/D	0.0-3.0:	0.0-3.3:	0.0-2.1:	0.0-0.5:	0.0-0.8:	0.0-1.6:	0.0:	0.0:	0.0-3.3:	0.0-2.5:	0.0-1.6:	0.0-2.1:
		Moist	Moist	Moist	Moist	Moist	Moist	Dry*	Dry*	Moist	Moist	Moist	Moist
		3.0-6.7:	3.3-6.7:	2.1-6.7:	0.5-6.7:	0.8-6.7:	1.6-6.7:	0.0-3.3:	0.0-4.1:	3.3-6.7:	2.5-6.7:	1.6-6.7:	2.1-6.7:
		Wet	Wet	Wet	Wet 	Wet	Wet	Moist  3.3-6.7:	Moist  4.1-6.7:	Wet 	Wet	Wet	Wet 
								Wet	Wet				
565:		 											
Eckvoll	В	0.0-5.4:	0.0-5.7:	0.0-4.6:	0.0-2.5:	0.0-3.1:	0.0-0.1:	0.0-0.2:	0.0-0.3:	0.0:	0.0-3.8:	0.0-3.3:	0.0-4.1:
	[	Moist	Moist	Moist	Moist	Moist	Dry	Dry	Dry	Dry*	Moist	Moist	Moist
		5.4-6.7:	5.7-6.7:	4.6-6.7:	2.5-6.7:	3.1-6.7:	0.1-3.8:	0.2-4.9:	0.3-6.7: Moist	0.0-4.1:	3.8-6.7:	3.3-6.7:	4.1-6.7:
		Wet	Wet	Wet	Wet	Wet	Moist   3.8-6.7:	Moist 4.9-6.7:	Moist	Moist 4.1-6.7:	Wet	Wet	Wet
							Wet	Wet	Wet*	Wet			
Chilgren	   c	0.0-3.0:	0.0-3.3:	  0.0-2.1:	0.0-0.5:	0.0-0.8:	0.0-1.3:	0.0-3.0:	0.0-3.8:	0.0-3.3:	0.0-1.6:	0.0-1.3:	0.0-2.1:
		Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist
	İ	3.0-6.7:	3.3-6.7:	2.1-6.7:	0.5-6.7:	0.8-6.7:	1.3-6.7:	3.0-6.7:	3.8-6.7:	3.3-6.7:	1.6-6.7:	1.3-6.7:	2.1-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Grygla	B/D	0.0-3.0:	0.0-3.3:	0.0-2.1:	0.0-0.5:	0.0-0.8:	0.0-1.6:	0.0-3.3:	0.0-4.1:	0.0-3.3:	0.0-2.5:	0.0-1.6:	0.0-2.1:
	ļ	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist
	!	3.0-6.7:	3.3-6.7:	2.1-6.7:	0.5-6.7:	0.8-6.7:	1.6-6.7:	3.3-6.7:	4.1-6.7:	3.3-6.7:	2.5-6.7:	1.6-6.7:	2.1-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet

Table 26.--Soil Moisture Status by Depth--Continued

and	Hydro- logic	January	February	March	April	May	June	July	August	September	October	November	December
component name	group		<u> </u>										<u> </u>
565: Hiwood	A	0.0-5.4:	0.0-6.2:	0.0-4.1:	0.0-2.5:	0.0-2.8:	0.0:	0.0-0.3:	0.0-0.5:	0.0-0.2:	0.0-4.6:	0.0-4.1:	0.0-4.9:
HIWOOd	A	Moist	Moist	Moist	Moist	Moist	Dry*	Dry	Dry	Dry	Moist	Moist	Moist
		5.4-6.7:	6.2-6.7:	4.1-6.7:	2.5-6.7:	2.8-6.7:	0.0-3.3:	0.3-6.7:	0.5-6.7:	0.2-4.9:	4.6-6.7:	4.1-6.7:	4.9-6.7:
		Wet	Wet	Wet	Wet	Wet	Moist	Moist	Moist	Moist	Wet	Wet	Wet
			wec		WEC		3.3-6.7:	MOISC	MOISC	4.9-6.7:			
							Wet			Wet			
568:	D /D	  0.0-3.0:	0.0-3.3:	  0.0-2.1:	0.0-0.5:	  0.0-0.8:	0.0-1.3:	0.0-3.0:	0.0-3.8:	0.0-3.3:	0.0-1.6:	0.0-1.3:	0.0-2.1:
Zippel	В/Д	0.0-3.0:   Moist	0.0-3.3:   Moist	0.0-2.1:   Moist	0.0-0.5:   Moist	0.0-0.8:   Moist	0.0-1.3:   Moist	0.0-3.0:   Moist	0.0-3.8:   Moist	0.0-3.3:   Moist	0.0-1.6:   Moist	0.0-1.3:   Moist	0.0-2.1:   Moist
		MO1St  3.0-6.7:	Moist  3.3-6.7:	MOIST  2.1-6.7:	Moist  0.5-6.7:	0.8-6.7:	Moist  1.3-6.7:	Moist  3.0-6.7:	Moist  3.8-6.7:	Moist  3.3-6.7:	Moist  1.6-6.7:	Moist  1.3-6.7:	Moist  2.1-6.7:
		3.0-6.7:   Wet	3.3-6./:	2.1-6./:   Wet	Wet	0.8-6./:	1.3-6./:	3.0-6.7:	3.8-6./:   Wet	3.3-6./:   Wet	1.0-0./:	1.3-6./:   Wet	2.1-6./:
		wet	Wet	wet	Wet	Wet	Wet	wet	Wet	Wet	Wet	wet	Wet
Augsburg,													
depressional	B/D	0.0-1.6:	0.0-3.0:	0.0:	0.0:	0.0:	0.0-0.8:	0.0-1.6:	0.0-2.5:	0.0-1.6:	0.0-1.3:	0.0-0.8:	0.0-1.3:
		Moist	Moist	Moist*	Moist*	Moist*	Moist	Moist	Moist	Moist	Moist	Moist	Moist
		1.6-6.7:	3.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.8-6.7:	1.6-6.7:	2.5-6.7:	1.6-6.7:	1.3-6.7:	0.8-6.7:	1.3-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Sago	D	0.0-1.6:	0.0-2.5:	0.0:	0.0:	0.0:	0.0-0.5:	0.0-0.8:	0.0-1.6:	0.0-1.3:	0.0-0.8:	0.0-0.3:	0.0-1.3:
J		Moist	Moist	Moist*	Moist*	Moist*	Moist	Moist	Moist	Moist	Moist	Moist	Moist
		1.6-6.7:	2.5-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.5-6.7:	0.8-6.7:	1.6-6.7:	1.3-6.7:	0.8-6.7:	0.3-6.7:	1.3-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Skime	A	0.0-5.4:	0.0-6.2:	  0.0-4.1:	0.0-2.5:	0.0-3.0:	0.0:	0.0-0.3:	0.0-0.5:	0.0-0.2:	0.0-4.6:	0.0-4.1:	0.0-4.9:
51121110		Moist	Moist	Moist	Moist	Moist	Drv*	Dry	Dry	Drv	Moist	Moist	Moist
		5.4-6.7:	6.2-6.7:	4.1-6.7:	2.5-6.7:	3.0-6.7:	0.0-3.3:	0.3-6.7:	0.5-6.7:	0.2-4.9:	4.6-6.7:	4.1-6.7:	4.9-6.7:
		Wet	Wet	Wet	Wet	Wet	Moist	Moist	Moist	Moist	Wet	Wet	Wet
					i		3.3-6.7:	i		4.9-6.7:	j	j	j
		į	į	į	į	į	Wet	į	į	Wet	į	į	į
569:		 							l I			l I	
Wabanica	С	0.0-3.0:	0.0-3.3:	0.0-2.1:	0.0-0.5:	0.0-0.8:	0.0-1.3:	0.0-3.0:	0.0-3.8:	0.0-3.3:	0.0-1.6:	0.0-1.3:	0.0-2.1:
		Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist
		3.0-6.7:	3.3-6.7:	2.1-6.7:	0.5-6.7:	0.8-6.7:	1.3-6.7:	3.0-6.7:	3.8-6.7:	3.3-6.7:	1.6-6.7:	1.3-6.7:	2.1-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Warroad	C	  0.0-3.0:	0.0-3.3:	  0.0-2.1:	0.0-0.5:	0.0-0.8:	0.0-1.6:	0.0-3.3:	0.0-4.1:	0.0-3.3:	0.0-2.5:	0.0-1.6:	0.0-2.1:
		Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist
		3.0-6.7:	3.3-6.7:	2.1-6.7:	0.5-6.7:	0.8-6.7:	1.6-6.7:	3.3-6.7:	4.1-6.7:	3.3-6.7:	2.5-6.7:	1.6-6.7:	2.1-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet

Table 26.--Soil Moisture Status by Depth--Continued

and	Hydro-  logic  group	January   	February	March   	April	May	June	July	August	September	October	November	Decembe
569:	 	 				l I							
Sax	D     	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-2.5:   Moist  2.5-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-0.3:   Moist  0.3-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet
Grano	       	0.0-2.1:   Moist  2.1-6.7:   Wet	0.0-2.5:   Moist  2.5-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-2.1:   Moist  2.1-6.7:   Wet	0.0-3.0:   Moist  3.0-6.7:   Wet	0.0-2.5:   Moist  2.5-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet
Enstrom	B         	0.0-5.4:   Moist   5.4-6.7:   Wet 	0.0-5.7:   Moist  5.7-6.7:   Wet 	0.0-4.6:   Moist   4.6-6.7:   Wet 	0.0-2.5:   Moist   2.5-6.7:   Wet 	0.0-3.1:   Moist  3.1-6.7:   Wet 	0.0-0.1:   Dry  0.1-3.8:   Moist  3.8-6.7:   Wet	0.0-0.2:   Dry  0.2-4.9:   Moist  4.9-6.7:   Wet	0.0-0.3:   Dry  0.3-6.7:   Moist  6.7:   Wet*	0.0:   Dry*   0.0-4.1:   Moist   4.1-6.7:   Wet	0.0-3.8:   Moist   3.8-6.7:   Wet 	0.0-3.3:   Moist   3.3-6.7:   Wet 	0.0-4.1:   Moist   4.1-6.7:   Wet 
570:	į	į		į	į	j	į		į	į	İ	į	į
Faunce	A     	0.0-6.7:   Moist   	0.0-6.7:   Moist 	0.0-6.7:   Moist   	0.0-6.7:   Moist 	0.0-6.7:   Moist 	0.0-0.2:   Dry   0.2-6.7:   Moist	0.0-0.3:   Dry   0.3-6.7:   Moist	0.0-0.7:   Dry  0.7-6.7:   Moist	0.0-0.5:   Dry  0.5-6.7:   Moist	0.0-6.7:   Moist 	0.0-6.7:   Moist 	0.0-6.7:   Moist 
Clearriver	   B       	0.0-5.4:   Moist  5.4-6.7:   Wet 	0.0-6.2:   Moist   6.2-6.7:   Wet 	0.0-4.1:   Moist  4.1-6.7:   Wet 	0.0-3.0:   Moist  3.0-6.7:   Wet 	0.0-3.8:   Moist  3.8-6.7:   Wet 	0.0:   Dry*  0.0-4.4:   Moist  4.4-6.7:   Wet	0.0-0.2:   Dry  0.2-6.7:   Moist 	0.0-0.3:   Dry  0.3-6.7:   Moist 	0.0-0.2:   Dry  0.2-4.9:   Moist  4.9-6.7:   Wet	0.0-4.6:   Moist   4.6-6.7:   Wet 	0.0-4.1:   Moist  4.1-6.7:   Wet	0.0-4.9:   Moist  4.9-6.7:   Wet 
Zimmerman	   A   	  0.0-6.7:   Moist 	0.0-6.7:   Moist 	0.0-6.7:   Moist 	0.0-6.7:   Moist 	0.0-6.7:   Moist 	0.0-0.2:   Dry  0.2-6.7:   Moist	0.0-0.3:   Dry  0.3-6.7:   Moist	0.0-0.7:   Dry  0.7-6.7:   Moist	0.0-0.5:   Dry  0.5-6.7:   Moist	0.0-6.7:   Moist 	0.0-6.7:   Moist 	0.0-6.7:   Moist 
Meehan	   B       	  0.0-3.3:   Moist  3.3-6.7:   Wet 	0.0-4.1:   Moist   4.1-6.7:   Wet 	0.0-3.3:   Moist   3.3-6.7:   Wet 	0.0-1.5:   Moist  1.5-6.7:   Wet 	0.0-1.8:   Moist  1.8-6.7:   Wet 	0.0:   Dry*  0.0-2.5:   Moist  2.5-6.7:   Wet	0.0-0.2:   Dry  0.2-4.9:   Moist  4.9-6.7:   Wet	0.0-0.3:   Dry   0.3-6.7:   Moist 	0.0-0.2:   Dry   0.2-4.9:   Moist   4.9-6.7:   Wet		0.0-2.5:   Moist   2.5-6.7:   Wet 	0.0-3.0:   Moist   3.0-6.7:   Wet
Pits, gravel.													

Table 26.--Soil Moisture Status by Depth--Continued

	Hydro-  logic  group	January   	February	March	April	May	June	July	August	September	October	November	Decembe
581:	 	 		 									
Percy	B/D	0.0-3.0:	0.0-3.3:	0.0-2.1:	0.0-0.5:	0.0-0.8:	0.0-1.3:	0.0-3.0:	0.0-3.8:	0.0-3.3:	0.0-1.6:	0.0-1.3:	0.0-2.1:
		Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist
		3.0-6.7:	3.3-6.7:	2.1-6.7:	0.5-6.7:	0.8-6.7:	1.3-6.7:	3.0-6.7:	3.8-6.7:	3.3-6.7:	1.6-6.7:	1.3-6.7:	2.1-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Haug	   B/D	  0.0-1.6:	0.0-2.5:	0.0:	0.0:	0.0:	0.0-0.5:	0.0-0.8:	0.0-1.6:	0.0-1.3:	0.0-0.8:	0.0-0.3:	0.0-1.3:
	, <i>,</i>	Moist	Moist	Moist*	Moist*	Moist*	Moist	Moist	Moist	Moist	Moist	Moist	Moist
	i	1.6-6.7:	2.5-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.5-6.7:	0.8-6.7:	1.6-6.7:	1.3-6.7:	0.8-6.7:	0.3-6.7:	1.3-6.7:
	į	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Boash	   D	  0.0-2.1:	0.0-2.5:	0.0-1.3:	0.0:	0.0-0.5:	0.0-1.3:	0.0-2.1:	0.0-3.0:	0.0-2.5:	0.0-1.6:	  0.0-1.3:	0.0-1.6:
Doubli	2	Moist	Moist	Moist	Moist*	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist
	 	2.1-6.7:	2.5-6.7:	1.3-6.7:	0.0-6.7:	0.5-6.7:	1.3-6.7:	2.1-6.7:	3.0-6.7:	2.5-6.7:	1.6-6.7:	1.3-6.7:	1.6-6.7:
	İ	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Skagen	   c	  0.0-5.4:	0.0-5.9:	0.0-4.9:	0.0-2.5:	0.0-2.8:	0.0:	0.0-0.2:	0.0-0.2:	0.0:	0.0-4.3:	0.0-3.3:	0.0-4.6:
Skagen	C	Moist	Moist	Moist	Moist	Moist	Dry*	Dry	Dry	Dry*	Moist	Moist	Moist
	 	5.4-6.7:	5.9-6.7:	4.9-6.7:	2.5-6.7:	2.8-6.7:	0.0-3.1:	0.2-5.7:	0.2-6.7:	0.0-4.9:	4.3-6.7:	3.3-6.7:	4.6-6.7:
	 	Wet	Wet	Wet	Wet	Wet	Moist	Moist	Moist	Moist	Wet	Wet	Wet
							3.1-6.7:	5.7-6.7:	6.7:	4.9-6.7:			
				į			Wet	Wet	Wet*	Wet		į	į
582:	 	 		 					 				
Roliss	B/D	0.0-3.0:	0.0-3.3:	0.0-2.1:	0.0-0.5:	0.0-0.8:	0.0-1.3:	0.0-3.0:	0.0-3.8:	0.0-3.3:	0.0-1.6:	0.0-1.3:	0.0-2.1:
	İ	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist
	į	3.0-6.7:	3.3-6.7:	2.1-6.7:	0.5-6.7:	0.8-6.7:	1.3-6.7:	3.0-6.7:	3.8-6.7:	3.3-6.7:	1.6-6.7:	1.3-6.7:	2.1-6.7:
	İ	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Roliss,	 	 											
depressional	B/D	0.0-1.6:	0.0-2.5:	0.0:	0.0:	0.0:	0.0-0.8:	0.0-1.6:	0.0-2.1:	0.0-1.6:	0.0-1.3:	0.0-0.5:	0.0-0.8:
		Moist	Moist	Moist*	Moist*	Moist*	Moist	Moist	Moist	Moist	Moist	Moist	Moist
		1.6-6.7:	2.5-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.8-6.7:	1.6-6.7:	2.1-6.7:	1.6-6.7:	1.3-6.7:	0.5-6.7:	0.8-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Boash	   D	0.0-2.1:	0.0-2.5:	0.0-1.3:	0.0:	0.0-0.5:	0.0-1.3:	0.0-2.1:	0.0-3.0:	0.0-2.5:	0.0-1.6:	0.0-1.3:	0.0-1.6:
	İ	Moist	Moist	Moist	Moist*	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist
		2.1-6.7:	2.5-6.7:	1.3-6.7:	0.0-6.7:	0.5-6.7:	1.3-6.7:	2.1-6.7:	3.0-6.7:	2.5-6.7:	1.6-6.7:	1.3-6.7:	1.6-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Haug	   B/D	  0.0-1.6:	0.0-2.5:	0.0:	0.0:	0.0:	0.0-0.5:	0.0-0.8:	0.0-1.6:	0.0-1.3:	0.0-0.8:	0.0-0.3:	0.0-1.3:
-	i	Moist	Moist	Moist*	Moist*	Moist*	Moist	Moist	Moist	Moist	Moist	Moist	Moist
	į	1.6-6.7:	2.5-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.5-6.7:	0.8-6.7:	1.6-6.7:	1.3-6.7:	0.8-6.7:	0.3-6.7:	1.3-6.7:
	i	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet

Table 26.--Soil Moisture Status by Depth--Continued

	Hydro-  logic  group	January	February	March   	April	May	June	July	August	September	October	November	December
583:	i	İ	j		j	j	j	i	j	į	į	į	i
Nereson	B         	0.0-5.4:   Moist   5.4-6.7:   Wet 	0.0-5.9:   Moist   5.9-6.7:   Wet 	0.0-4.9:   Moist  4.9-6.7:   Wet 	0.0-2.5:   Moist  2.5-6.7:   Wet 	0.0-2.8:   Moist  2.8-6.7:   Wet 	0.0:   Dry*   0.0-3.1:   Moist   3.1-6.7:   Wet	0.0-0.2:   Dry   0.2-5.7:   Moist   5.7-6.7:   Wet	0.0-0.2:   Dry   0.2-6.7:   Moist   6.7:   Wet*	0.0:   Dry*   0.0-4.9:   Moist   4.9-6.7:   Wet	0.0-4.3:   Moist   4.3-6.7:   Wet 	0.0-3.3:   Moist  3.3-6.7:   Wet 	0.0-4.6:   Moist   4.6-6.7:   Wet 
Percy	   B/D     	  0.0-3.0:   Moist  3.0-6.7:   Wet	0.0-3.3:   Moist  3.3-6.7:   Wet	0.0-2.1:   Moist   2.1-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.8:   Moist   0.8-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-3.0:   Moist  3.0-6.7:   Wet	0.0-3.8:   Moist  3.8-6.7:   Wet	0.0-3.3:   Moist  3.3-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-2.1:   Moist  2.1-6.7:   Wet
Pelan	B         	0.0-5.4:   Moist  5.4-6.7:   Wet 	0.0-5.7:   Moist  5.7-6.7:   Wet 	0.0-4.6:   Moist  4.6-6.7:   Wet 	0.0-2.5:   Moist   2.5-6.7:   Wet 	0.0-3.0:   Moist  3.0-6.7:   Wet 	0.0:   Dry*   0.0-3.6:   Moist   3.6-6.7:   Wet	0.0-0.2:   Dry   0.2-5.4:   Moist   5.4-6.7:   Wet	0.0-0.3:   Dry   0.3-6.7:   Moist   6.7:   Wet*	0.0:   Dry*   0.0-4.6:   Moist   4.6-6.7:   Wet	0.0-3.9:   Moist  3.9-6.7:   Wet 	0.0-3.3:   Moist  3.3-6.7:   Wet 	0.0-4.6:   Moist  4.6-6.7:   Wet 
Foxhome	   B       	  0.0-5.4:   Moist  5.4-6.7:   Wet 	0.0-5.7:   Moist  5.7-6.7:   Wet 	0.0-4.6:   Moist   4.6-6.7:   Wet 	0.0-2.5:   Moist   2.5-6.7:   Wet 	0.0-3.0:   Moist  3.0-6.7:   Wet 	0.0:   Dry*   0.0-3.6:   Moist   3.6-6.7:   Wet	0.0-0.2:   Dry   0.2-5.4:   Moist   5.4-6.7:   Wet	0.0-0.3:   Dry   0.3-6.7:   Moist   6.7:   Wet*	0.0:   Dry*   0.0-4.6:   Moist   4.6-6.7:   Wet	0.0-3.9:   Moist   3.9-6.7:   Wet 	0.0-3.3:   Moist   3.3-6.7:   Wet 	0.0-4.6:   Moist   4.6-6.7:   Wet 
627:			1		Į.	1	Ţ			1		Ţ	
Tawas	A/D       	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-2.1:   Moist  2.5-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.1:   Moist  1.1-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.3:   Moist  0.3-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet
Leafriver	A/D     	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-2.5:   Moist  2.5-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-0.8:   Moist   0.8-6.7:   Wet	0.0-0.3:   Moist  0.3-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet
Lupton	   A/D     	  0.0-1.0:   Moist  1.0-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	  0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.1:   Moist  1.1-6.7:   Wet	0.0-0.5:   Moist   0.5-6.7:   Wet	0.0-0.3:   Moist  0.3-6.7:   Wet	0.0-0.8:   Moist   0.8-6.7:   Wet

Table 26.--Soil Moisture Status by Depth--Continued

	Hydro-  logic  group	January   	February 	March   	April   	May   	June   	July   	August   	September   	October   	November   	Decembe:
627:		[											
Cormant	   A/D 	  0.0-2.5:   Moist  2.5-6.7:	0.0-3.3:   Moist   3.3-6.7:	  0.0-2.1:   Moist  2.1-6.7:	  0.0-0.5:   Moist  0.5-6.7:	0.0-1.3:   Moist  1.3-6.7:	0.0-1.6:   Moist  1.6-6.7:	0.0:   Dry*  0.0-3.3:	0.0:   Dry*   0.0-4.9:	0.0-3.0:   Moist   3.0-6.7:	0.0-2.1:   Moist  2.1-6.7:	  0.0-1.6:   Moist  1.6-6.7:	0.0-2.1:   Moist   2.1-6.7:
	   	Wet 	Wet 	Wet 	Wet 	Wet 	Wet 	Moist  3.3-6.7:   Wet	Moist  4.9-6.7:   Wet	Wet 	Wet 	Wet 	Wet 
630:	 	 		 				1					
Wildwood	D     	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-2.5:   Moist  2.5-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-0.8:   Moist   0.8-6.7:   Wet	0.0-0.3:   Moist  0.3-6.7:   Wet	0.0-1.3:   Moist   1.3-6.7:   Wet
Boash	       	0.0-2.1:   Moist  2.1-6.7:   Wet	0.0-2.5:   Moist  2.5-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-2.1:   Moist  2.1-6.7:   Wet	0.0-3.0:   Moist  3.0-6.7:   Wet	0.0-2.5:   Moist  2.5-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet
Dora	   B/D     	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-2.1:   Moist  2.1-6.7:   Wet	  0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.8:   Moist   0.8-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.1:   Moist  1.1-6.7:   Wet	0.0-0.5:   Moist   0.5-6.7:   Wet	0.0-0.3:   Moist  0.3-6.7:   Wet	0.0-0.8:   Moist   0.8-6.7:   Wet
Espelie	   B/D   	0.0-2.1:   Moist  2.1-6.7:   Wet	0.0-2.6:   Moist  2.6-6.7:   Wet	0.0-2.3:   Moist   2.3-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-3.0:   Moist  3.0-6.7:   Wet	0.0-3.8:   Moist  3.8-6.7:   Wet	0.0-3.3:   Moist  3.3-6.7:   Wet	0.0-2.5:   Moist  2.5-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-2.0:   Moist  2.0-6.7:   Wet
643:	 	 		 									
Huot	в 	0.0-5.4:   Moist  5.4-6.7:	0.0-5.7:   Moist  5.7-6.7:	0.0-4.6:   Moist  4.6-6.7:	0.0-2.5:   Moist  2.5-6.7:	0.0-3.0:   Moist  3.0-6.7:	0.0-3.8:   Moist  3.8-6.7:	0.0-0.2:   Dry   0.2-4.6:	0.0-0.3:   Dry   0.3-6.7:	0.0:   Dry*  0.0-4.1:	0.0-3.8:   Moist   3.8-6.7:	0.0-3.3:   Moist  3.3-6.7:	0.0-4.1:   Moist   4.1-6.7:
	     	Wet   	Wet   	Wet   	Wet   	Wet   	Wet   	Moist  4.6-6.7:   Wet	Moist  6.7:   Wet*	Moist  4.1-6.7:   Wet	Wet   	Wet   	Wet   
Thiefriver	   B/D   	  0.0-2.1:   Moist  2.1-6.7:	0.0-2.6:   Moist   2.6-6.7:	0.0-2.3:   Moist   2.3-6.7:	  0.0-0.5:   Moist  0.5-6.7:	  0.0-0.8:   Moist  0.8-6.7:	0.0-1.6:   Moist  1.6-6.7:	0.0-3.0:   Moist  3.0-6.7:	0.0-3.8:   Moist   3.8-6.7:	0.0-3.3:   Moist   3.3-6.7:	0.0-2.5:   Moist   2.5-6.7:	  0.0-1.6:   Moist  1.6-6.7:	0.0-2.0:   Moist   2.0-6.7:
	İ	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet

Table 26.--Soil Moisture Status by Depth--Continued

and	Hydro-  logic  group	January	February	March 	April	May	June	July	August	September	October	November	Decembe
643:	 	 		 		}							
Redby	   B 	0.0-3.3:   Moist	Moist	0.0-3.3:   Moist	0.0-1.5:   Moist	0.0-1.8:   Moist	0.0:   Dry*	0.0-0.2: Dry	0.0-0.3: Dry	0.0-0.2: Dry	0.0-3.0:   Moist	0.0-2.5:   Moist	0.0-3.0:   Moist
	     	3.3-6.7:   Wet 	4.1-6.7:   Wet 	3.3-6.7:   Wet 	1.5-6.7:   Wet 	1.8-6.7:   Wet 	0.0-2.5:   Moist   2.5-6.7:   Wet	0.2-4.9:   Moist  4.9-6.7:   Wet	0.3-6.7:   Moist 	0.2-4.9:   Moist   4.9-6.7:   Wet	3.0-6.7:   Wet 	2.5-6.7:   Wet 	3.0-6.7:   Wet 
644:	i I	  -	į	į	İ	į	į	į	İ	İ	į	į	į
Boash	   D	0.0-2.1:	0.0-2.5:	0.0-1.3:	0.0:	0.0-0.5:	0.0-1.3:	0.0-2.1:	0.0-3.0:	0.0-2.5:	0.0-1.6:	0.0-1.3:	0.0-1.6:
	İ	Moist	Moist	Moist	Moist*	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist
	j	2.1-6.7:	2.5-6.7:	1.3-6.7:	0.0-6.7:	0.5-6.7:	1.3-6.7:	2.1-6.7:	3.0-6.7:	2.5-6.7:	1.6-6.7:	1.3-6.7:	1.6-6.7:
	 	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Percy	   B/D	0.0-3.0:	0.0-3.3:	0.0-2.1:	0.0-0.5:	0.0-0.8:	0.0-1.3:	0.0-3.0:	0.0-3.8:	0.0-3.3:	0.0-1.6:	0.0-1.3:	0.0-2.1:
		Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist
		3.0-6.7:	3.3-6.7:	2.1-6.7:	0.5-6.7:	0.8-6.7:	1.3-6.7:	3.0-6.7:	3.8-6.7:	3.3-6.7:	1.6-6.7:	1.3-6.7:	2.1-6.7:
	 	Wet 	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Woodslake	D	0.0-1.3:	0.0-1.6:	0.0:	0.0:	0.0:	0.0-0.5:	0.0-1.3:	0.0-1.6:	0.0-1.3:	0.0-0.8:	0.0-0.5:	0.0-0.8:
		Moist	Moist	Moist*	Moist*	Moist*	Moist	Moist	Moist	Moist	Moist	Moist	Moist
		1.3-6.7:	1.6-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.5-6.7:	1.3-6.7:	1.6-6.7:	1.3-6.7:	0.8-6.7:	0.5-6.7:	0.8-6.7:
		Wet 	Wet	Wet 	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet 
Strandquist	B/D	0.0-3.0:	0.0-3.3:	0.0-2.1:	0.0-0.5:	0.0-0.8:	0.0-1.6:	0.0:	0.0:	0.0-3.3:	0.0-2.5:	0.0-1.6:	0.0-2.1:
		Moist	Moist	Moist	Moist	Moist	Moist	Dry*	Dry*	Moist	Moist	Moist	Moist
	 	3.0-6.7: Wet	3.3-6.7:   Wet	2.1-6.7:   Wet	0.5-6.7:   Wet	0.8-6.7: Wet	1.6-6.7:   Wet	0.0-3.3:   Moist	0.0-4.1: Moist	3.3-6.7:   Wet	2.5-6.7: Wet	1.6-6.7:   Wet	2.1-6.7:
	 	wet 	wet	wet 	wet	wet	wet	3.3-6.7:	4.1-6.7:	wet	wet	wet	wet
								Wet	Wet				
645:	 	 		 									
Espelie	B/D	0.0-2.1:	0.0-2.6:	0.0-2.3:	0.0-0.5:	0.0-0.8:	0.0-1.6:	0.0-3.0:	0.0-3.8:	0.0-3.3:	0.0-2.5:	0.0-1.6:	0.0-2.0:
	j	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist
		2.1-6.7:	2.6-6.7:	2.3-6.7:	0.5-6.7:	0.8-6.7:	1.6-6.7:	3.0-6.7:	3.8-6.7:	3.3-6.7:	2.5-6.7:	1.6-6.7:	2.0-6.7:
	 	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Grano	   D	0.0-2.1:	0.0-2.5:	0.0-1.3:	0.0:	0.0-0.5:	0.0-1.3:	0.0-2.1:	0.0-3.0:	0.0-2.5:	0.0-1.6:	0.0-1.3:	0.0-1.6:
		Moist	Moist	Moist	Moist*	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist
		2.1-6.7:	2.5-6.7:	1.3-6.7:	0.0-6.7:	0.5-6.7:	1.3-6.7:	2.1-6.7:	3.0-6.7:	2.5-6.7:	1.6-6.7:	1.3-6.7:	1.6-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro-  logic  group	January   	February	March   	April   	May	June	July	August	September	October	November	Decembe:
645:		 	i		i	i	i	1	i	i		i	
Hilaire	В       	0.0-5.4:   Moist   5.4-6.7:   Wet 	0.0-5.7:   Moist   5.7-6.7:   Wet 	0.0-4.6:   Moist  4.6-6.7:   Wet 	0.0-2.5:   Moist  2.5-6.7:   Wet 	0.0-3.0:   Moist  3.0-6.7:   Wet 	0.0-3.8:   Moist   3.8-6.7:   Wet 	0.0-0.2:   Dry  0.2-4.6:   Moist  4.6-6.7:	0.0-0.3:   Dry  0.3-6.7:   Moist  6.7:   Wet*	0.0:   Dry*  0.0-4.1:   Moist  4.1-6.7:	0.0-3.8:   Moist   3.8-6.7:   Wet 	0.0-3.3:   Moist  3.3-6.7:   Wet 	0.0-4.1:   Moist   4.1-6.7:   Wet 
	İ				İ	İ							İ
Wildwood	D     	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-2.5:   Moist   2.5-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.8:   Moist   0.8-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-0.3:   Moist   0.3-6.7:   Wet	0.0-1.3:   Moist   1.3-6.7:   Wet
651:	 	 	1						 	I I		i	
Thiefriver	B/D     	0.0-2.1:   Moist  2.1-6.7:   Wet	0.0-2.6:   Moist  2.6-6.7:   Wet	0.0-2.3:   Moist   2.3-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-3.0:   Moist  3.0-6.7:   Wet	0.0-3.8:   Moist  3.8-6.7:   Wet	0.0-3.3:   Moist  3.3-6.7:   Wet	0.0-2.5:   Moist  2.5-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-2.0:   Moist  2.0-6.7:   Wet
Grano	   D   	  0.0-2.1:   Moist  2.1-6.7:   Wet		  0.0-1.3:   Moist  1.3-6.7:   Wet	  0.0:   Moist*  0.0-6.7:   Wet	  0.0-0.5:   Moist  0.5-6.7:   Wet	  0.0-1.3:   Moist  1.3-6.7:   Wet	  0.0-2.1:   Moist  2.1-6.7:   Wet		  0.0-2.5:   Moist  2.5-6.7:   Wet	  0.0-1.6:   Moist  1.6-6.7:   Wet		  0.0-1.6:   Moist  1.6-6.7:   Wet
Huot	   B       	0.0-5.4:   Moist  5.4-6.7:   Wet 	Moist	0.0-4.6:   Moist  4.6-6.7:   Wet 	0.0-2.5:   Moist  2.5-6.7:   Wet 	0.0-3.0:   Moist   3.0-6.7:   Wet 	0.0-3.8:   Moist  3.8-6.7:   Wet 	0.0-0.2:   Dry   0.2-4.6:   Moist   4.6-6.7:   Wet	0.0-0.3:   Dry   0.3-6.7:   Moist   6.7:   Wet*	0.0:   Dry*   0.0-4.1:   Moist   4.1-6.7:   Wet	0.0-3.8:   Moist   3.8-6.7:   Wet 	0.0-3.3:   Moist   3.3-6.7:   Wet 	0.0-4.1:   Moist   4.1-6.7:   Wet 
Wildwood	   D   	  0.0-1.6:   Moist  1.6-6.7:   Wet	  0.0-2.5:   Moist  2.5-6.7:   Wet	  0.0:   Moist*  0.0-6.7:   Wet		  0.0:   Moist*  0.0-6.7:   Wet	0.0-0.5:   Moist   0.5-6.7:   Wet	  0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.6:   Moist   1.6-6.7:   Wet	  0.0-1.3:   Moist  1.3-6.7:   Wet	  0.0-0.8:   Moist  0.8-6.7:   Wet	  0.0-0.3:   Moist  0.3-6.7:   Wet	  0.0-1.3:   Moist  1.3-6.7:   Wet
708:	 	 											
Rushlake	A       	0.0-5.4:   Moist  5.4-6.7:   Wet 	0.0-6.2:   Moist   6.2-6.7:   Wet 	0.0-4.1:   Moist  4.1-6.7:   Wet 	0.0-3.0:   Moist  3.0-6.7:   Wet 	0.0-3.8:   Moist  3.8-6.7:   Wet 	0.0:   Dry*  0.0-4.4:   Moist  4.4-6.7:	0.0-0.3:   Dry  0.3-6.7:   Moist 	0.0-0.5:   Dry  0.5-6.7:   Moist 	0.0-0.3:   Dry   0.3-4.9:   Moist   4.9-6.7:	0.0-4.6:   Moist   4.6-6.7:   Wet 	0.0-4.1:   Moist  4.1-6.7:   Wet 	0.0-4.9:   Moist   4.9-6.7:   Wet 

Table 26.--Soil Moisture Status by Depth--Continued

	Hydro- logic group	January	February	March	April	May	June	July	August	September	October	November	Decembe:
708:	 	 											
Corliss	A     	0.0-6.7:   Moist 	0.0-6.7:   Moist 	0.0-6.7:   Moist 	0.0-6.7:   Moist 	0.0:   Dry*  0.0-6.7:   Moist	0.0-0.3:   Dry  0.3-6.7:   Moist	0.0-0.5:   Dry  0.5-6.7:   Moist	0.0-0.7:   Dry  0.7-6.7:   Moist	0.0-0.5:   Dry  0.5-6.7:   Moist	0.0:   Dry*  0.0-6.7:   Moist	0.0-6.7:   Moist 	0.0-6.7:   Moist 
Redby	B         	0.0-3.3:   Moist   3.3-6.7:   Wet 	0.0-4.1: Moist 4.1-6.7: Wet	0.0-3.3:   Moist   3.3-6.7:   Wet 	0.0-1.5:   Moist  1.5-6.7:   Wet 	0.0-1.8:   Moist  1.8-6.7:   Wet 	0.0:   Dry*  0.0-2.5:   Moist  2.5-6.7:   Wet	0.0-0.2:   Dry  0.2-4.9:   Moist  4.9-6.7:   Wet	0.0-0.3:   Dry  0.3-6.7:   Moist 	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-3.0:   Moist   3.0-6.7:   Wet 	0.0-2.5:   Moist  2.5-6.7:   Wet 	0.0-3.0:   Moist  3.0-6.7:   Wet 
Hangaard	   A/D       	0.0-3.0:   Moist  3.0-6.7:   Wet 	0.0-3.3:   Moist  3.3-6.7:   Wet 	0.0-2.5:   Moist  2.5-6.7:   Wet 	0.0-0.3:   Moist   0.3-6.7:   Wet 	0.0-0.8:   Moist   0.8-6.7:   Wet 	0.0-1.6:   Moist   1.6-6.7:   Wet 	0.0:   Dry*   0.0-2.5:   Moist   2.5-6.7:   Wet	0.0:   Dry*   0.0-3.3:   Moist   3.3-6.7:   Wet	0.0-2.5:   Moist   2.5-6.7:   Wet 	0.0-2.1:   Moist  2.1-6.7:   Wet 	0.0-1.6:   Moist  1.6-6.7:   Wet 	0.0-2.1:   Moist  2.1-6.7:   Wet 
Pits, gravel.		    -											
712:		 		1	l I	l I	1						
Rosewood	   A/D       	0.0-2.5:   Moist  2.5-6.7:   Wet 	0.0-3.3:   Moist   3.3-6.7:   Wet 	0.0-2.1:   Moist  2.1-6.7:   Wet 	0.0-0.5:   Moist   0.5-6.7:   Wet 	0.0-1.3:   Moist  1.3-6.7:   Wet 	0.0-1.6:   Moist   1.6-6.7:   Wet 	0.0:   Dry*   0.0-3.3:   Moist   3.3-6.7:   Wet	0.0:   Dry*   0.0-4.9:   Moist   4.9-6.7:   Wet	0.0-3.0:   Moist   3.0-6.7:   Wet 	0.0-2.1:   Moist  2.1-6.7:   Wet 	0.0-1.6:   Moist  1.6-6.7:   Wet 	0.0-2.1:   Moist  2.1-6.7:   Wet 
Deerwood	   B/D   	  0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-2.5:   Moist  2.5-6.7:   Wet	  0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*   0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.5:   Moist   0.5-6.7:   Wet	0.0-0.8:   Moist   0.8-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	  0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-0.3:   Moist   0.3-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet
Hangaard	   A/D         	  0.0-3.0:   Moist  3.0-6.7:   Wet 	0.0-3.3:   Moist   3.3-6.7:   Wet 	  0.0-2.5:   Moist  2.5-6.7:   Wet 	0.0-0.3:   Moist   0.3-6.7:   Wet 	0.0-0.8:   Moist  0.8-6.7:   Wet 	0.0-1.6:   Moist   1.6-6.7:   Wet 	0.0:   Dry*   0.0-2.5:   Moist   2.5-6.7:   Wet	0.0:   Dry*   0.0-3.3:   Moist   3.3-6.7:   Wet	0.0-2.5:   Moist   2.5-6.7:   Wet 	  0.0-2.1:   Moist  2.1-6.7:   Wet 	0.0-1.6:   Moist  1.6-6.7:   Wet 	

Table 26.--Soil Moisture Status by Depth--Continued

and	Hydro-  logic  group	January	February	March	April	May	June	July	August	September	October	November	Decembe:
712:	i i	 						1					
Ulen	В	0.0-3.3:	1	0.0-3.3:	0.0-2.0:	0.0-2.5:	0.0:	0.0-0.2:	0.0-0.3:	0.0:	0.0-3.0:	0.0-2.5:	0.0-3.0:
		Moist	Moist	Moist	Moist	Moist	Dry*	Dry	Dry	Dry*	Moist	Moist	Moist
		3.3-6.7:		3.3-6.7:	2.0-6.7:	2.5-6.7:	0.0-3.0:	0.2-4.9:	0.3-6.7:	0.0-4.9:	3.0-6.7:	2.5-6.7:	3.0-6.7:
		Wet	Wet	Wet	Wet	Wet	Moist	Moist	Moist	Moist	Wet	Wet	Wet
	 	 					3.0-6.7:   Wet	4.9-6.7:   Wet		4.9-6.7:   Wet			
721B:	 	 		 									
Corliss	A	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0:	0.0-0.3:	0.0-0.5:	0.0-0.7:	0.0-0.5:	0.0:	0.0-6.7:	0.0-6.7:
	į	Moist	Moist	Moist	Moist	Dry*	Dry	Dry	Dry	Dry	Dry*	Moist	Moist
	ĺ					0.0-6.7:	0.3-6.7:	0.5-6.7:	0.7-6.7:	0.5-6.7:	0.0-6.7:		
	 	 		 		Moist	Moist	Moist	Moist	Moist	Moist		
Rushlake	   A	0.0-5.4:		0.0-4.1:	0.0-3.0:	0.0-3.8:	0.0:	0.0-0.3:	0.0-0.5:	0.0-0.3:	0.0-4.6:	0.0-4.1:	0.0-4.9:
		Moist	Moist	Moist	Moist	Moist	Dry*	Dry	Dry	Dry	Moist	Moist	Moist
		5.4-6.7:	1	4.1-6.7:	3.0-6.7:	3.8-6.7:	0.0-4.4:	0.3-6.7:	0.5-6.7:	0.3-4.9:	4.6-6.7:	4.1-6.7:	4.9-6.7:
		Wet	Wet	Wet	Wet	Wet	Moist	Moist	Moist	Moist	Wet	Wet	Wet
	 						4.4-6.7:   Wet			4.9-6.7:   Wet			
Hangaard	   A/D	  0.0-3.0:	0.0-3.3:	  0.0-2.5:	0.0-0.3:	0.0-0.8:	0.0-1.6:	0.0:	0.0:	0.0-2.5:	0.0-2.1:	0.0-1.6:	0.0-2.1:
		Moist	Moist	Moist	Moist	Moist	Moist	Dry*	Dry*	Moist	Moist	Moist	Moist
		3.0-6.7:	3.3-6.7:	2.5-6.7:	0.3-6.7:	0.8-6.7:	1.6-6.7:	0.0-2.5:	0.0-3.3:	2.5-6.7:	2.1-6.7:	1.6-6.7:	2.1-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Moist	Moist	Wet	Wet	Wet	Wet
	 			 !				2.5-6.7: Wet	3.3-6.7:   Wet				
Pits, gravel.	 	 		 									
733:	 	 		 									
Berner	A/D	0.0-1.3:	0.0-2.1:	0.0:	0.0:	0.0:	0.0:	0.0-0.8:	0.0-1.6:	0.0-1.1:	0.0-0.5:	0.0-0.3:	0.0-0.8:
		Moist	Moist	Moist*	Moist*	Moist*	Moist*	Moist	Moist	Moist	Moist	Moist	Moist
		1.3-6.7:	2.1-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.8-6.7:	1.6-6.7:	1.1-6.7:	0.5-6.7:	0.3-6.7:	0.8-6.7:
	 	Wet 	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Grygla	B/D	0.0-3.0:	0.0-3.3:	0.0-2.1:	0.0-0.5:	0.0-0.8:	0.0-1.6:	0.0-3.3:	0.0-4.1:	0.0-3.3:	0.0-2.5:	0.0-1.6:	0.0-2.1:
		Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist
		3.0-6.7:	1	2.1-6.7:	0.5-6.7:	0.8-6.7:	1.6-6.7:	3.3-6.7:	4.1-6.7:	3.3-6.7:	2.5-6.7:	1.6-6.7:	2.1-6.7:
	 	Wet 	Wet	Wet 	Wet	Wet	Wet	Wet 	Wet	Wet	Wet	Wet	Wet 
Seelyeville	A/D	0.0-1.0:	0.0-1.6:	0.0:	0.0:	0.0:	0.0-0.3:	0.0-0.8:	0.0-1.6:	0.0-1.1:	0.0-0.5:	0.0-0.3:	0.0-0.8:
		Moist	Moist	Moist*	Moist*	Moist*	Moist	Moist	Moist	Moist	Moist	Moist	Moist
		1.0-6.7:	1.6-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.3-6.7:	0.8-6.7:	1.6-6.7:	1.1-6.7:	0.5-6.7:	0.3-6.7:	0.8-6.7:
	!	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January	February	March	April	May	June	July	August	September	October	November	Decembe
737:	 	 									1		
Mahkonce	c       	0.0-5.4:   Moist  5.4-6.7:   Wet 	0.0-5.9:   Moist  5.9-6.7:   Wet 	0.0-4.9:   Moist   4.9-6.7:   Wet 	0.0-2.5:   Moist  2.5-6.7:   Wet 	0.0-2.8:   Moist  2.8-6.7:   Wet 	0.0:   Dry*  0.0-3.1:   Moist  3.1-6.7:   Wet	0.0-0.2:   Dry  0.2-5.7:   Moist  5.7-6.7:   Wet	0.0-0.2:   Dry  0.2-6.7:   Moist  6.7:   Wet*	0.0:   Dry*  0.0-4.9:   Moist  4.9-6.7:   Wet	0.0-4.3:   Moist   4.3-6.7:   Wet 	0.0-3.3:   Moist  3.3-6.7:   Wet 	0.0-4.6:   Moist  4.6-6.7:   Wet 
Auganaush	   c   	  0.0-2.5:   Moist  2.5-6.7:   Wet	0.0-3.0:   Moist  3.0-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.8:   Moist   0.8-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-2.6:   Moist   2.6-6.7:   Wet	0.0-3.3:   Moist  3.3-6.7:   Wet	0.0-2.6:   Moist  2.6-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-2.0:   Moist  2.0-6.7:   Wet
Eckvoll	   B       	  0.0-5.4:   Moist  5.4-6.7:   Wet 	0.0-5.7:   Moist   5.7-6.7:   Wet 	0.0-4.6:   Moist   4.6-6.7:   Wet 	0.0-2.5:   Moist  2.5-6.7:   Wet 	0.0-3.1:   Moist  3.1-6.7:   Wet 	0.0-0.1:   Dry  0.1-3.8:   Moist  3.8-6.7:   Wet	0.0-0.2:   Dry  0.2-4.9:   Moist  4.9-6.7:   Wet	0.0-0.3:   Dry   0.3-6.7:   Moist   6.7:   Wet*	0.0:   Dry*   0.0-4.1:   Moist   4.1-6.7:   Wet	0.0-3.8:   Moist   3.8-6.7:   Wet 	0.0-3.3:   Moist   3.3-6.7:   Wet 	0.0-4.1:   Moist   4.1-6.7:   Wet 
755:	 	l I								İ			
Woodslake	р     	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet
Boash	Д   Д   	  0.0-2.1:   Moist  2.1-6.7:   Wet	0.0-2.5:   Moist  2.5-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-2.1:   Moist  2.1-6.7:   Wet	0.0-3.0:   Moist  3.0-6.7:   Wet	0.0-2.5:   Moist  2.5-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet
Wildwood	 	  0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-2.5:   Moist  2.5-6.7:   Wet	0.0:   Moist*   0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.8:   Moist   0.8-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-0.8:   Moist   0.8-6.7:   Wet	0.0-0.3:   Moist   0.3-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet
Dora	   B/D     	  0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-2.1:   Moist  2.1-6.7:   Wet	0.0:   Moist*   0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.8:   Moist   0.8-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.1:   Moist  1.1-6.7:   Wet	0.0-0.5:   Moist   0.5-6.7:   Wet	0.0-0.3:   Moist   0.3-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet

Table 26.--Soil Moisture Status by Depth--Continued

and	Hydro-  logic  group	January	February	March	April	May	June	July	August	September	October	November	Decembe
767:	 	 					-					1	
Auganaush	C	0.0-2.5:	0.0-3.0:	0.0-1.6:	0.0:	0.0-0.8:	0.0-1.3:	0.0-2.6:	0.0-3.3:	0.0-2.6:	0.0-1.6:	0.0-1.3:	0.0-2.0:
		Moist	Moist	Moist	Moist*	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist
		2.5-6.7:	3.0-6.7:	1.6-6.7:	0.0-6.7:	0.8-6.7:	1.3-6.7:	2.6-6.7:	3.3-6.7:	2.6-6.7:	1.6-6.7:	1.3-6.7:	2.0-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Mustinka	   C/D	0.0-2.1:	0.0-2.5:	0.0-1.3:	0.0:	0.0-0.5:	0.0-1.3:	0.0-2.1:	0.0-3.0:	0.0-2.5:	0.0-1.6:	0.0-1.3:	0.0-1.6:
	i	Moist	Moist	Moist	Moist*	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist
	j	2.1-6.7:	2.5-6.7:	1.3-6.7:	0.0-6.7:	0.5-6.7:	1.3-6.7:	2.1-6.7:	3.0-6.7:	2.5-6.7:	1.6-6.7:	1.3-6.7:	1.6-6.7:
	İ	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Wildwood	   D	  0.0-1.6:	0.0-2.5:	0.0:	0.0:	0.0:	0.0-0.5:	0.0-0.8:	0.0-1.6:	0.0-1.3:	0.0-0.8:	0.0-0.3:	0.0-1.3:
	İ	Moist	Moist	Moist*	Moist*	Moist*	Moist	Moist	Moist	Moist	Moist	Moist	Moist
	j	1.6-6.7:	2.5-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.5-6.7:	0.8-6.7:	1.6-6.7:	1.3-6.7:	0.8-6.7:	0.3-6.7:	1.3-6.7:
	į	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Mahkonce	   C	  0.0-5.4:	0.0-5.9:	0.0-4.9:	0.0-2.5:	0.0-2.8:	0.0:	0.0-0.2:	0.0-0.2:	0.0:	0.0-4.3:	0.0-3.3:	0.0-4.6:
	İ	Moist	Moist	Moist	Moist	Moist	Dry*	Dry	Dry	Dry*	Moist	Moist	Moist
	İ	5.4-6.7:	5.9-6.7:	4.9-6.7:	2.5-6.7:	2.8-6.7:	0.0-3.1:	0.2-5.7:	0.2-6.7:	0.0-4.9:	4.3-6.7:	3.3-6.7:	4.6-6.7:
	j	Wet	Wet	Wet	Wet	Wet	Moist	Moist	Moist	Moist	Wet	Wet	Wet
	į	i	i	i			3.1-6.7:	5.7-6.7:	6.7:	4.9-6.7:	j		
					į	į	Wet	Wet	Wet*	Wet			İ
794:	 												
Clearriver	В	0.0-5.4:	0.0-6.2:	0.0-4.1:	0.0-3.0:	0.0-3.8:	0.0:	0.0-0.2:	0.0-0.3:	0.0-0.2:	0.0-4.6:	0.0-4.1:	0.0-4.9:
	ĺ	Moist	Moist	Moist	Moist	Moist	Dry*	Dry	Dry	Dry	Moist	Moist	Moist
		5.4-6.7:	6.2-6.7:	4.1-6.7:	3.0-6.7:	3.8-6.7:	0.0-4.4:	0.2-6.7:	0.3-6.7:	0.2-4.9:	4.6-6.7:	4.1-6.7:	4.9-6.7:
		Wet	Wet	Wet	Wet	Wet	Moist	Moist	Moist	Moist	Wet	Wet	Wet
	 	 					4.4-6.7:   Wet			4.9-6.7:   Wet			
Hiwood	   A	  0.0-5.4:	0.0-6.2:	0.0-4.1:	0.0-2.5:	0.0-2.8:	0.0:	0.0-0.3:	0.0-0.5:	0.0-0.2:	0.0-4.6:	0.0-4.1:	0.0-4.9:
	į	Moist	Moist	Moist	Moist	Moist	Dry*	Dry	Dry	Dry	Moist	Moist	Moist
	ĺ	5.4-6.7:	6.2-6.7:	4.1-6.7:	2.5-6.7:	2.8-6.7:	0.0-3.3:	0.3-6.7:	0.5-6.7:	0.2-4.9:	4.6-6.7:	4.1-6.7:	4.9-6.7:
		Wet	Wet	Wet	Wet	Wet	Moist	Moist	Moist	Moist	Wet	Wet	Wet
	 	 					3.3-6.7: Wet			4.9-6.7:   Wet			
Meehan	   в	  0.0-3.3:	0.0-4.1:	0.0-3.3:	0.0-1.5:	0.0-1.8:	0.0:	0.0-0.2:	0.0-0.3:	0.0-0.2:	0.0-3.0:	0.0-2.5:	0.0-3.0:
•	İ	Moist	Moist	Moist	Moist	Moist	Dry*	Dry	Dry	Dry	Moist	Moist	Moist
	i İ	3.3-6.7:		3.3-6.7:	1.5-6.7:	1.8-6.7:	0.0-2.5:	0.2-4.9:	0.3-6.7:	0.2-4.9:	3.0-6.7:	2.5-6.7:	3.0-6.7:
	i İ	Wet	Wet	Wet	Wet	Wet	Moist	Moist	Moist	Moist	Wet	Wet	Wet
	İ						2.5-6.7:	4.9-6.7:		4.9-6.7:			
	i	i	i	i	i	i	Wet	Wet	i	Wet	i	i	i

Table 26.--Soil Moisture Status by Depth--Continued

	Hydro-  logic  group	January   	February 	March 	April 	May 	June 	July 	August	September	October	November	Decembe
	 	1	1	1	1	1	1	1	1	1	1	Ī	1
794:	İ	İ	i	İ	i	İ	i	i	İ	i	i	i	İ
Faunce	A	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-0.2:	0.0-0.3:	0.0-0.7:	0.0-0.5:	0.0-6.7:	0.0-6.7:	0.0-6.7
		Moist	Moist	Moist	Moist	Moist	Dry	Dry	Dry	Dry	Moist	Moist	Moist
							0.2-6.7:	0.3-6.7:	0.7-6.7:	0.5-6.7:			
			!	!	ļ		Moist	Moist	Moist	Moist	ļ		
1002:												1	
Fluvaquents,	l I		1	l I		l I			l I	I			
frequently	l I		1	l I		l I			l I	I			
flooded	l D	0.0-1.3:	0.0-1.6:	0.0:	0.0:	0.0:	0.0-0.5:	0.0-1.3:	0.0-1.6:	0.0-1.3:	0.0-0.8:	0.0-0.5:	0.0-0.8:
1100ded	ע ן	Moist	Moist	Moist*	Moist*	Moist*	Moist	Moist	Moist	Moist	Moist	Moist	Moist
	l I	1.3-6.7:	1.6-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.5-6.7:	1.3-6.7:	1.6-6.7:	1.3-6.7:	0.8-6.7:	0.5-6.7:	0.8-6.7:
	l I	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
	l I	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Seelyeville	   D	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:
•	İ	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
	j	į	j	İ	j	j	İ	İ	j	İ	İ	j	İ
Hapludalfs	В	0.0-5.4:	0.0-6.2:	0.0-5.4:	0.0-2.5:	0.0-2.8:	0.0-3.1:	0.0-0.1:	0.0-0.2:	0.0-4.9:	0.0-4.6:	0.0-3.3:	0.0-4.1:
		Moist	Moist	Moist	Moist	Moist	Moist	Dry	Dry	Moist	Moist	Moist	Moist
		5.4-6.7:	6.2-6.7:	5.4-6.7:	2.5-6.7:	2.8-6.7:	3.1-6.7:	0.1-5.7:	0.2-6.7:	4.9-6.7:	4.6-6.7:	3.3-6.7:	4.1-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Moist	Moist	Wet	Wet	Wet	Wet
								5.7-6.7:	6.7:				
		İ	!		Ţ	!	Ţ	Wet	Wet*	İ	į.	Ţ	
Water.	 	 											
1030:												1	
Pits, gravel.	 	1	1	1		l I			l I	I		l I	
rics, graver.	 			1								1	
Udipsamments	   A 												
Corliss	l A	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0:	0.0-0.3:	0.0-0.5:	0.0-0.7:	0.0-0.5:	0.0:	0.0-6.7:	0.0-6.7:
	İ	Moist	Moist	Moist	Moist	Dry*	Dry	Dry	Dry	Dry	Dry*	Moist	Moist
	İ					0.0-6.7:	0.3-6.7:	0.5-6.7:	0.7-6.7:	0.5-6.7:	0.0-6.7:		
	İ		İ		İ	Moist	Moist	Moist	Moist	Moist	Moist	i	
			!		Į.		Ţ	Ţ		ļ		Ţ	
Karlstad	A	0.0-5.4:	0.0-6.2:	0.0-4.1:	0.0-3.0:	0.0-3.8:	0.0:	0.0-0.2:	0.0-0.3:	0.0-0.2:	0.0-4.6:	0.0-4.1:	0.0-4.9:
		Moist	Moist	Moist	Moist	Moist	Dry*	Dry	Dry	Dry	Moist	Moist	Moist
		5.4-6.7:	6.2-6.7:	4.1-6.7:	3.0-6.7:	3.8-6.7:	0.0-4.4:	0.2-6.7:	0.3-6.7:	0.2-4.9:	4.6-6.7:	4.1-6.7:	4.9-6.7:
		Wet	Wet	Wet	Wet	Wet	Moist	Moist	Moist	Moist	Wet	Wet	Wet
							4.4-6.7:			4.9-6.7:			
	1			1			Wet		1	Wet	1	1	1

Table 26.--Soil Moisture Status by Depth--Continued

and	Hydro-  logic  group	January   	February	March	April	May	June	July   	August	September	October	November	Decembe
1030:	 												
Hangaard	A/D	0.0-3.0:	0.0-3.3:	0.0-2.5:	0.0-0.3:	0.0-0.8:	0.0-1.6:	0.0:	0.0:	0.0-2.5:	0.0-2.1:	0.0-1.6:	0.0-2.1:
		Moist	Moist	Moist	Moist	Moist	Moist	Dry*	Dry*	Moist	Moist	Moist	Moist
		3.0-6.7:	3.3-6.7:	2.5-6.7:	0.3-6.7:	0.8-6.7:	1.6-6.7:	0.0-2.5:	0.0-3.3:	1	2.1-6.7:	1.6-6.7:	2.1-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Moist	Moist	Wet	Wet	Wet	Wet
	 	 		 				2.5-6.7: Wet	3.3-6.7: Wet				
1031:	 	 		 									
Seelyeville,													
ponded	D	0.0-6.7:		0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:
	 	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Cathro	A/D	0.0-1.3:	0.0-2.1:	0.0:	0.0:	0.0:	0.0:	0.0-0.8:	0.0-1.6:	0.0-1.1:	0.0-0.5:	0.0-0.3:	0.0-0.8:
		Moist	Moist	Moist*	Moist*	Moist*	Moist*	Moist	Moist	Moist	Moist	Moist	Moist
		1.3-6.7:	2.1-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.8-6.7:	1.6-6.7:	1.1-6.7:	0.5-6.7:	0.3-6.7:	0.8-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Dora	   B/D	0.0-1.3:	0.0-2.1:	0.0:	0.0:	0.0:	0.0:	0.0-0.8:	0.0-1.6:	0.0-1.1:	0.0-0.5:	0.0-0.3:	0.0-0.8:
	į	Moist	Moist	Moist*	Moist*	Moist*	Moist*	Moist	Moist	Moist	Moist	Moist	Moist
	ĺ	1.3-6.7:	2.1-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.8-6.7:	1.6-6.7:	1.1-6.7:	0.5-6.7:	0.3-6.7:	0.8-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Markey	   A/D	0.0-1.3:	0.0-2.1:	0.0:	0.0:	0.0:	0.0:	0.0-0.8:	0.0-1.6:	0.0-1.1:	0.0-0.5:	0.0-0.3:	0.0-0.8:
	į	Moist	Moist	Moist*	Moist*	Moist*	Moist*	Moist	Moist	Moist	Moist	Moist	Moist
	ĺ	1.3-6.7:	2.1-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.8-6.7:	1.6-6.7:	1.1-6.7:	0.5-6.7:	0.3-6.7:	0.8-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
1067:	 	 						l I					
Fluvaquents,	İ	İ	İ	İ	j	İ	İ	İ	j	İ	İ	İ	j
frequently													
flooded	D	0.0-1.3:	1	0.0:	0.0:	0.0:	0.0-0.5:	0.0-1.3:	0.0-1.6:	0.0-1.3:	0.0-0.8:	0.0-0.5:	0.0-0.8:
		Moist	Moist	Moist*	Moist*	Moist*	Moist	Moist	Moist	Moist	Moist	Moist	Moist
		1.3-6.7:	1.6-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.5-6.7:	1.3-6.7:	1.6-6.7:	1.3-6.7:	0.8-6.7:	0.5-6.7:	0.8-6.7:
	 	Wet 	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Hapludalfs	В	0.0-5.4:	0.0-6.2:	0.0-5.4:	0.0-2.5:	0.0-2.8:	0.0-3.1:	0.0-0.1:	0.0-0.2:	0.0-4.9:	0.0-4.6:	0.0-3.3:	0.0-4.1:
		Moist	Moist	Moist	Moist	Moist	Moist	Dry	Dry	Moist	Moist	Moist	Moist
		5.4-6.7:	6.2-6.7:	5.4-6.7:	2.5-6.7:	2.8-6.7:	3.1-6.7:	0.1-5.7:	0.2-6.7:	4.9-6.7:	4.6-6.7:	3.3-6.7:	4.1-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Moist	Moist	Wet	Wet	Wet	Wet
	 							5.7-6.7:   Wet	6.7:   Wet*				
Seelyeville	   D	  0.0-6.7:	0.0-6.7:	  0.0-6.7:	0.0-6.7:	  0.0-6.7:	0.0-6.7:	  0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:
-	i	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet

Table 26.--Soil Moisture Status by Depth--Continued

and	Hydro-  logic  group	January 	February	March	April	May	June	July 	August	September	October	November	December
1067:	 	 											
Water.	İ		į	į	į	į	į	į	į	į	į		į
1133B:	 	 											
Skime	A	0.0-5.4:	0.0-6.2:	0.0-4.1:	0.0-2.5:	0.0-3.0:	0.0:	0.0-0.3:	0.0-0.5:	0.0-0.2:	0.0-4.6:	0.0-4.1:	0.0-4.9:
		Moist	Moist	Moist	Moist	Moist	Dry*	Dry	Dry	Dry	Moist	Moist	Moist
		5.4-6.7:	6.2-6.7:	4.1-6.7:	2.5-6.7:	3.0-6.7:	0.0-3.3:	0.3-6.7:	0.5-6.7:	0.2-4.9:	4.6-6.7:	4.1-6.7:	4.9-6.7:
		Wet	Wet	Wet	Wet	Wet	Moist	Moist	Moist	Moist	Wet	Wet	Wet
							3.3-6.7:			4.9-6.7:			
		 					Wet			Wet			
Hiwood	   A	0.0-5.4:	0.0-6.2:	0.0-4.1:	0.0-2.5:	0.0-2.8:	0.0:	0.0-0.3:	0.0-0.5:	0.0-0.2:	0.0-4.6:	0.0-4.1:	0.0-4.9:
	ĺ	Moist	Moist	Moist	Moist	Moist	Dry*	Dry	Dry	Dry	Moist	Moist	Moist
		5.4-6.7:	6.2-6.7:	4.1-6.7:	2.5-6.7:	2.8-6.7:	0.0-3.3:	0.3-6.7:	0.5-6.7:	0.2-4.9:	4.6-6.7:	4.1-6.7:	4.9-6.7:
		Wet	Wet	Wet	Wet	Wet	Moist	Moist	Moist	Moist	Wet	Wet	Wet
							3.3-6.7:			4.9-6.7:			
							Wet			Wet			
Zippel	   B/D	0.0-3.0:	0.0-3.3:	0.0-2.1:	0.0-0.5:	0.0-0.8:	0.0-1.3:	0.0-3.0:	0.0-3.8:	0.0-3.3:	0.0-1.6:	0.0-1.3:	0.0-2.1:
	ĺ	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist
		3.0-6.7:	3.3-6.7:	2.1-6.7:	0.5-6.7:	0.8-6.7:	1.3-6.7:	3.0-6.7:	3.8-6.7:	3.3-6.7:	1.6-6.7:	1.3-6.7:	2.1-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
1134:	i i	 						1					
Borup	B/D	0.0-3.0:	0.0-3.3:	0.0-2.1:	0.0-0.5:	0.0-0.8:	0.0-1.3:	0.0-3.0:	0.0-3.8:	0.0-3.3:	0.0-1.6:	0.0-1.3:	0.0-2.1:
		Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist
		3.0-6.7:	3.3-6.7:	2.1-6.7:	0.5-6.7:	0.8-6.7:	1.3-6.7:	3.0-6.7:	3.8-6.7:	3.3-6.7:	1.6-6.7:	1.3-6.7:	2.1-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Glyndon	   B	0.0-4.9:	0.0-5.7:	0.0-4.9:	0.0-1.6:	0.0-2.0:	0.0-3.3:	0.0:	0.0:	0.0-4.9:	0.0-4.6:	0.0-3.3:	0.0-4.1:
_	į	Moist	Moist	Moist	Moist	Moist	Moist	Dry*	Dry*	Moist	Moist	Moist	Moist
	ĺ	4.9-6.7:	5.7-6.7:	4.9-6.7:	1.6-6.7:	2.0-6.7:	3.3-6.7:	0.0-5.2:	0.0-6.7:	4.9-6.7:	4.6-6.7:	3.3-6.7:	4.1-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Moist	Moist	Wet	Wet	Wet	Wet
								5.2-6.7:	6.7:				
		 						Wet	Wet*				
Augsburg,		! 											
depressional	B/D	0.0-1.6:	0.0-3.0:	0.0:	0.0:	0.0:	0.0-0.8:	0.0-1.6:	0.0-2.5:	0.0-1.6:	0.0-1.3:	0.0-0.8:	0.0-1.3:
		Moist	Moist	Moist*	Moist*	Moist*	Moist	Moist	Moist	Moist	Moist	Moist	Moist
		1.6-6.7:	3.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.8-6.7:	1.6-6.7:	2.5-6.7:	1.6-6.7:	1.3-6.7:	0.8-6.7:	1.3-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January 	February	March 	April	May	June	July	August	September	October	November	December
1134:				 									
Skime	A       	0.0-5.4:   Moist   5.4-6.7:   Wet 	0.0-6.2:   Moist   6.2-6.7:   Wet 	0.0-4.1:   Moist   4.1-6.7:   Wet 	0.0-2.5:   Moist  2.5-6.7:   Wet 	0.0-3.0:   Moist   3.0-6.7:   Wet 	0.0:   Dry*  0.0-3.3:   Moist  3.3-6.7:   Wet	0.0-0.3:   Dry   0.3-6.7:   Moist 	0.0-0.5:   Dry  0.5-6.7:   Moist 	0.0-0.2:   Dry   0.2-4.9:   Moist   4.9-6.7:   Wet	0.0-4.6:   Moist   4.6-6.7:   Wet 	0.0-4.1:   Moist  4.1-6.7:   Wet	0.0-4.9:   Moist   4.9-6.7:   Wet
1144:		 		 									
Strathcona,		ì		i	i	i	i	i	i	i	i	ì	
depressional	B/D       	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-2.5:   Moist  2.5-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-2.5:   Moist  2.5-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet
Kratka,					i	i	i		i	i	i	ì	
depressional	B/D     	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-2.5:   Moist  2.5-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-2.5:   Moist  2.5-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet
Kratka	   B/D     	  0.0-3.0:   Moist  3.0-6.7:   Wet	0.0-3.3:   Moist  3.3-6.7:   Wet	  0.0-2.1:   Moist  2.1-6.7:   Wet	0.0-0.5:   Moist   0.5-6.7:   Wet	  0.0-0.8:   Moist  0.8-6.7:   Wet	  0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-3.3:   Moist   3.3-6.7:   Wet	0.0-4.1:   Moist  4.1-6.7:   Wet	0.0-3.3:   Moist   3.3-6.7:   Wet	0.0-2.5:   Moist  2.5-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-2.1:   Moist   2.1-6.7:   Wet
Northwood	   B/D   	  0.0-1.6:   Moist  1.6-6.7:   Wet	  0.0-2.5:   Moist  2.5-6.7:   Wet	  0.0:   Moist*  0.0-6.7:   Wet	  0.0:   Moist*  0.0-6.7:   Wet	  0.0:   Moist*  0.0-6.7:   Wet	  0.0-0.5:   Moist  0.5-6.7:   Wet	  0.0-0.8:   Moist  0.8-6.7:   Wet	  0.0-1.6:   Moist  1.6-6.7:   Wet	  0.0-1.3:   Moist  1.3-6.7:   Wet	  0.0-0.8:   Moist  0.8-6.7:   Wet	  0.0-0.3:   Moist  0.3-6.7:   Wet	0.0-1.3:   Moist   1.3-6.7:   Wet
1154:													
Sax	     	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-2.5:   Moist  2.5-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-0.3:   Moist  0.3-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet
Wabanica	   c 	  0.0-3.0:   Moist  3.0-6.7:   Wet	0.0-3.3:   Moist   3.3-6.7:	  0.0-2.1:   Moist  2.1-6.7:   Wet		  0.0-0.8:   Moist  0.8-6.7:   Wet		  0.0-3.0:   Moist  3.0-6.7:   Wet			  0.0-1.6:   Moist  1.6-6.7:   Wet	  0.0-1.3:   Moist  1.3-6.7:	
		460	460	1160	Mec	Mec	Mec	#66	Mec	Mec	460	Wec	MEL
Cathro	A/D     	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-2.1:   Moist  2.1-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:	0.0-1.6:   Moist  1.6-6.7:	0.0-1.1:   Moist  1.1-6.7:	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.3:   Moist  0.3-6.7:	0.0-0.8:   Moist  0.8-6.7:   Wet

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January	February	March	April	May	June	July	August	September	October	November	Decembe
1154:		 											
Woodslake	Д     	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.8:   Moist   0.8-6.7:   Wet
1158:		! 	i	i	i	ì	i			i	i		
Skagen	C         	0.0-5.4:   Moist   5.4-6.7:   Wet 	0.0-5.9:   Moist  5.9-6.7:   Wet 	0.0-4.9:   Moist  4.9-6.7:   Wet 	0.0-2.5:   Moist  2.5-6.7:   Wet 	0.0-2.8:   Moist  2.8-6.7:   Wet 	0.0:   Dry*   0.0-3.1:   Moist   3.1-6.7:   Wet	0.0-0.2:   Dry   0.2-5.7:   Moist   5.7-6.7:   Wet	0.0-0.2:   Dry   0.2-6.7:   Moist   6.7:   Wet*	0.0:   Dry*  0.0-4.9:   Moist  4.9-6.7:   Wet	0.0-4.3:   Moist   4.3-6.7:   Wet 	0.0-3.3:   Moist   3.3-6.7:   Wet 	0.0-4.6:   Moist   4.6-6.7:   Wet 
Percy	   B/D     	  0.0-3.0:   Moist  3.0-6.7:   Wet	0.0-3.3:   Moist  3.3-6.7:   Wet	0.0-2.1:   Moist   2.1-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-3.0:   Moist  3.0-6.7:   Wet	0.0-3.8:   Moist  3.8-6.7:   Wet	0.0-3.3:   Moist  3.3-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-2.1:   Moist   2.1-6.7:   Wet
Foxhome	   B       	0.0-5.4:   Moist  5.4-6.7:   Wet 	0.0-5.7:   Moist   5.7-6.7:   Wet 	0.0-4.6:   Moist   4.6-6.7:   Wet 	0.0-2.5:   Moist   2.5-6.7:   Wet 	0.0-3.0:   Moist   3.0-6.7:   Wet 	0.0:   Dry*   0.0-3.6:   Moist   3.6-6.7:   Wet	0.0-0.2:   Dry   0.2-5.4:   Moist   5.4-6.7:   Wet	0.0-0.3:   Dry   0.3-6.7:   Moist   6.7:   Wet*	0.0:   Dry*   0.0-4.6:   Moist   4.6-6.7:   Wet	0.0-3.9:   Moist   3.9-6.7:   Wet 	0.0-3.3:   Moist   3.3-6.7:   Wet 	0.0-4.6:   Moist   4.6-6.7:   Wet 
1170:													
Skagen, very		ĺ	į		İ	į	İ	İ	į	İ	İ	İ	į
cobbly	C       	0.0-5.4:   Moist  5.4-6.7:   Wet 	0.0-5.9:   Moist  5.9-6.7:   Wet 	0.0-4.9:   Moist  4.9-6.7:   Wet 	0.0-2.5:   Moist  2.5-6.7:   Wet 	0.0-2.8:   Moist  2.8-6.7:   Wet 	0.0:   Dry*  0.0-3.1:   Moist  3.1-6.7:   Wet	0.0-0.2:   Dry  0.2-5.7:   Moist  5.7-6.7:   Wet	0.0-0.2:   Dry  0.2-6.7:   Moist  6.7:   Wet*	0.0:   Dry*   0.0-4.9:   Moist   4.9-6.7:   Wet	0.0-4.3:   Moist  4.3-6.7:   Wet 	0.0-3.3:   Moist   3.3-6.7:   Wet 	0.0-4.6:   Moist  4.6-6.7:   Wet 
Percy, very		 					l						
cobbly	B/D     	0.0-3.0:   Moist  3.0-6.7:   Wet	0.0-3.3:   Moist   3.3-6.7:   Wet	0.0-2.1:   Moist  2.1-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-3.0:   Moist  3.0-6.7:   Wet	0.0-3.8:   Moist  3.8-6.7:   Wet	0.0-3.3:   Moist  3.3-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-2.1:   Moist  2.1-6.7:   Wet
Foxhome	   B       	   0.0-5.4:   Moist   5.4-6.7:   Wet 	0.0-5.7:   Moist   5.7-6.7:   Wet 	0.0-4.6:   Moist   4.6-6.7:   Wet 	0.0-2.5:   Moist   2.5-6.7:   Wet 	0.0-3.0:   Moist   3.0-6.7:   Wet 	0.0:   Dry*  0.0-3.6:   Moist  3.6-6.7:   Wet	0.0-0.2:   Dry   0.2-5.4:   Moist   5.4-6.7:   Wet	0.0-0.3:   Dry   0.3-6.7:   Moist   6.7:   Wet*	0.0:   Dry*   0.0-4.6:   Moist   4.6-6.7:   Wet	0.0-3.9:   Moist   3.9-6.7:   Wet 	0.0-3.3: Moist 3.3-6.7: Wet	0.0-4.6:   Moist   4.6-6.7:   Wet 

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro-	January	February	March	April	May	June	July	August	September	October	November	Decembe
component name	group	<u> </u>	1	1	I	I	I	1	I I	1	1	I	1
1179B:	l I	 							1	I I	 	i	l I
Moranville	В	0.0-5.4:	0.0-5.7:	0.0-4.6:	0.0-2.5:	0.0-3.1:	0.0-0.1:	0.0-0.2:	0.0-0.3:	0.0:	0.0-3.8:	0.0-3.3:	0.0-4.1:
	į	Moist	Moist	Moist	Moist	Moist	Dry	Dry	Dry	Dry*	Moist	Moist	Moist
	į	5.4-6.7:	5.7-6.7:	4.6-6.7:	2.5-6.7:	3.1-6.7:	0.1-3.8:	0.2-4.9:	0.3-6.7:	0.0-4.1:	3.8-6.7:	3.3-6.7:	4.1-6.7:
	ĺ	Wet	Wet	Wet	Wet	Wet	Moist	Moist	Moist	Moist	Wet	Wet	Wet
							3.8-6.7:	4.9-6.7:	6.7:	4.1-6.7:			
	ļ		!				Wet	Wet	Wet*	Wet		Ţ	
Baudette	   в	  0.0-5.4:	0.0-6.2:	0.0-5.4:	0.0-2.5:	0.0-3.0:	0.0-3.6:	0.0-0.1:	0.0-0.2:	0.0-4.9:	0.0-4.6:	0.0-3.3:	0.0-4.1:
Daudecce	5	Moist	Moist	Moist	Moist	Moist	Moist	Dry	Dry	Moist	Moist	Moist	Moist
	 	5.4-6.7:	6.2-6.7:	5.4-6.7:	2.5-6.7:	3.0-6.7:	3.6-6.7:	0.1-5.7:	0.2-6.7:	4.9-6.7:	4.6-6.7:	3.3-6.7:	4.1-6.7:
	 	Wet	Wet	Wet	Wet	Wet	Wet	Moist	Moist	Wet	Wet	Wet	Wet
								5.7-6.7:	6.7:				
	İ		İ		i	i	i	Wet	Wet*	i	İ	i	İ
	İ	İ	İ	İ	İ	İ	İ	İ	İ	İ	İ	İ	İ
Hiwood	A	0.0-5.4:		0.0-4.1:	0.0-2.5:	0.0-2.8:	0.0:	0.0-0.3:	0.0-0.5:	0.0-0.2:	0.0-4.6:	0.0-4.1:	0.0-4.9:
		Moist	Moist	Moist	Moist	Moist	Dry*	Dry	Dry	Dry	Moist	Moist	Moist
		5.4-6.7:	6.2-6.7:	4.1-6.7:	2.5-6.7:	2.8-6.7:	0.0-3.3:	0.3-6.7:	0.5-6.7:	0.2-4.9:	4.6-6.7:	4.1-6.7:	4.9-6.7:
		Wet	Wet	Wet	Wet	Wet	Moist	Moist	Moist	Moist	Wet	Wet	Wet
	 	 					3.3-6.7:   Wet			4.9-6.7:   Wet			
	į		j		j	j		i		i	İ	j	į
Spooner	C/D	0.0-3.0:	0.0-3.3:	0.0-2.1:	0.0-0.5:	0.0-0.8:	0.0-1.3:	0.0-3.0:	0.0-3.8:	0.0-3.3:	0.0-1.6:	0.0-1.3:	0.0-2.1:
		Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist
		3.0-6.7:	1	2.1-6.7:	0.5-6.7:	0.8-6.7:	1.3-6.7:	3.0-6.7:	3.8-6.7:	3.3-6.7:	1.6-6.7:	1	1
		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
1181:	l I	 					l I			I I		İ	
Rosewood	A/D	0.0-2.5:	0.0-3.3:	0.0-2.1:	0.0-0.5:	0.0-1.3:	0.0-1.6:	0.0:	0.0:	0.0-3.0:	0.0-2.1:	0.0-1.6:	0.0-2.1:
	ĺ	Moist	Moist	Moist	Moist	Moist	Moist	Dry*	Dry*	Moist	Moist	Moist	Moist
		2.5-6.7:	3.3-6.7:	2.1-6.7:	0.5-6.7:	1.3-6.7:	1.6-6.7:	0.0-3.3:	0.0-4.9:	3.0-6.7:	2.1-6.7:	1.6-6.7:	2.1-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Moist	Moist	Wet	Wet	Wet	Wet
								3.3-6.7:	4.9-6.7:				
								Wet	Wet			[	
Ulen	   B	  0.0-3.3:	0.0-4.1:	0.0-3.3:	0.0-2.0:	0.0-2.5:	0.0:	0.0-0.2:	0.0-0.3:	0.0:	0.0-3.0:	0.0-2.5:	0.0-3.0:
	i	Moist	Moist	Moist	Moist	Moist	Dry*	Dry	Dry	Dry*	Moist	Moist	Moist
	į	3.3-6.7:	4.1-6.7:	3.3-6.7:	2.0-6.7:	2.5-6.7:	0.0-3.0:	0.2-4.9:	0.3-6.7:	0.0-4.9:	3.0-6.7:	2.5-6.7:	3.0-6.7:
	į	Wet	Wet	Wet	Wet	Wet	Moist	Moist	Moist	Moist	Wet	Wet	Wet
	İ	i	i		i	i	3.0-6.7:	4.9-6.7:	i	4.9-6.7:	i		j
	i	i	i	i	i	i	Wet	Wet	i	Wet	i	i	i

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro-  logic  group	January 	February	March	April	May	June	July	August	September	October	November	Decembe:
1181:	 	l İ		 								}	
Redby	   B     	0.0-3.3:   Moist   3.3-6.7:   Wet 	0.0-4.1: Moist 4.1-6.7: Wet	0.0-3.3:   Moist   3.3-6.7:   Wet 	0.0-1.5:   Moist  1.5-6.7:   Wet 	0.0-1.8:   Moist  1.8-6.7:   Wet 	0.0:   Dry*  0.0-2.5:   Moist  2.5-6.7:   Wet	0.0-0.2:   Dry  0.2-4.9:   Moist  4.9-6.7:   Wet	0.0-0.3:   Dry  0.3-6.7:   Moist 	0.0-0.2:   Dry   0.2-4.9:   Moist   4.9-6.7:   Wet	0.0-3.0:   Moist   3.0-6.7:   Wet 	0.0-2.5:   Moist  2.5-6.7:   Wet 	0.0-3.0:   Moist   3.0-6.7:   Wet 
Deerwood	   B/D     	  0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-2.5:   Moist  2.5-6.7:   Wet	  0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*   0.0-6.7:   Wet	0.0:   Moist*   0.0-6.7:   Wet	0.0-0.5:   Moist   0.5-6.7:   Wet	0.0-0.8:   Moist   0.8-6.7:   Wet	0.0-1.6:   Moist   1.6-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	  0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-0.3:   Moist   0.3-6.7:   Wet	0.0-1.3:   Moist   1.3-6.7:   Wet
Syrene	   B/D       	  0.0-3.0:   Moist  3.0-6.7:   Wet 	0.0-3.3:   Moist   3.3-6.7:   Wet 	  0.0-2.5:   Moist  2.5-6.7:   Wet 	0.0-0.3:   Moist   0.3-6.7:   Wet 	0.0-0.8:   Moist  0.8-6.7:   Wet 	0.0-1.6:   Moist  1.6-6.7:   Wet 	0.0:   Dry*  0.0-2.5:   Moist  2.5-6.7:   Wet	0.0:   Dry*   0.0-3.3:   Moist   3.3-6.7:   Wet	0.0-2.5:   Moist   2.5-6.7:   Wet 	0.0-2.1:   Moist   2.1-6.7:   Wet 	0.0-1.6:   Moist  1.6-6.7:   Wet 	0.0-2.1:   Moist   2.1-6.7:   Wet 
1182:		 		 									
Warroad	c     	0.0-3.0:   Moist  3.0-6.7:   Wet	0.0-3.3:   Moist  3.3-6.7:   Wet	0.0-2.1:   Moist   2.1-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-3.3:   Moist  3.3-6.7:   Wet	0.0-4.1:   Moist  4.1-6.7:   Wet	0.0-3.3:   Moist  3.3-6.7:   Wet	0.0-2.5:   Moist  2.5-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-2.1:   Moist  2.1-6.7:   Wet
Wabanica	   C   	0.0-3.0:   Moist  3.0-6.7:   Wet	0.0-3.3:   Moist  3.3-6.7:   Wet	0.0-2.1:   Moist   2.1-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-3.0:   Moist  3.0-6.7:   Wet	0.0-3.8:   Moist  3.8-6.7:   Wet	0.0-3.3:   Moist  3.3-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-2.1:   Moist  2.1-6.7:   Wet
Enstrom	   B       	  0.0-5.4:   Moist  5.4-6.7:   Wet 	0.0-5.7: Moist  5.7-6.7:   Wet 	  0.0-4.6:   Moist  4.6-6.7:   Wet 	0.0-2.5:   Moist  2.5-6.7:   Wet 	0.0-3.1:   Moist  3.1-6.7:   Wet 	0.0-0.1:   Dry   0.1-3.8:   Moist   3.8-6.7:   Wet	0.0-0.2:   Dry   0.2-4.9:   Moist   4.9-6.7:   Wet	0.0-0.3:   Dry   0.3-6.7:   Moist   6.7:   Wet*	0.0:   Dry*   0.0-4.1:   Moist   4.1-6.7:   Wet	0.0-3.8:   Moist   3.8-6.7:   Wet 	0.0-3.3:   Moist   3.3-6.7:   Wet	0.0-4.1:   Moist   4.1-6.7:   Wet 
Sax	   D     	  0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-2.5:   Moist  2.5-6.7:   Wet	  0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*   0.0-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.8:   Moist   0.8-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	  0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-0.3:   Moist  0.3-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet
1187: Dora, ponded	     D 	  0.0-6.7:   Wet	0.0-6.7:	  0.0-6.7:   Wet	  0.0-6.7:   Wet	  0.0-6.7:   Wet	  0.0-6.7:   Wet	0.0-6.7:	0.0-6.7:	0.0-6.7:	  0.0-6.7:   Wet	0.0-6.7:	0.0-6.7:

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and	Hydro-	January	February	March	April	May	June	July	August	September	October	November	Decembe
component name	group	1	1	1	1	1	1	1	1	1	1	1	T T
1187:	 	 		 								1	
Seelyeville,	İ		i	i	i	i	i	i	i	i	i	i	i
ponded	D	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:
_	į	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Wildwood	   D	  0.0-1.6:	0.0-2.5:	0.0:	0.0:	0.0:	0.0-0.5:	0.0-0.8:	0.0-1.6:	0.0-1.3:	0.0-0.8:	0.0-0.3:	0.0-1.3:
	İ	Moist	Moist	Moist*	Moist*	Moist*	Moist	Moist	Moist	Moist	Moist	Moist	Moist
	ĺ	1.6-6.7:	2.5-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.5-6.7:	0.8-6.7:	1.6-6.7:	1.3-6.7:	0.8-6.7:	0.3-6.7:	1.3-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Boash	   D	0.0-2.1:	0.0-2.5:	0.0-1.3:	0.0:	0.0-0.5:	0.0-1.3:	0.0-2.1:	0.0-3.0:	0.0-2.5:	0.0-1.6:	0.0-1.3:	0.0-1.6:
		Moist	Moist	Moist	Moist*	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist
		2.1-6.7:	2.5-6.7:	1.3-6.7:	0.0-6.7:	0.5-6.7:	1.3-6.7:	2.1-6.7:	3.0-6.7:	2.5-6.7:	1.6-6.7:	1.3-6.7:	1.6-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
1191:		 											
Sahkahtay	В	0.0-3.0:	0.0-3.3:	0.0-2.5:	0.0-0.3:	0.0-0.8:	0.0-1.6:	0.0:	0.0:	0.0-2.5:	0.0-2.1:	0.0-1.6:	0.0-2.1:
		Moist	Moist	Moist	Moist	Moist	Moist	Dry*	Dry*	Moist	Moist	Moist	Moist
		3.0-6.7:	3.3-6.7:	2.5-6.7:	0.3-6.7:	0.8-6.7:	1.6-6.7:	0.0-2.5:	0.0-3.3:	2.5-6.7:	2.1-6.7:	1.6-6.7:	2.1-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Moist	Moist	Wet	Wet	Wet	Wet
								2.5-6.7:	3.3-6.7:				
	 	 		 			1	Wet	Wet			1	
Cormant	A/D	0.0-2.5:	0.0-3.3:	0.0-2.1:	0.0-0.5:	0.0-1.3:	0.0-1.6:	0.0:	0.0:	0.0-3.0:	0.0-2.1:	0.0-1.6:	0.0-2.1:
		Moist	Moist	Moist	Moist	Moist	Moist	Dry*	Dry*	Moist	Moist	Moist	Moist
		2.5-6.7:	3.3-6.7:	2.1-6.7:	0.5-6.7:	1.3-6.7:	1.6-6.7:	0.0-3.3:	0.0-4.9:	3.0-6.7:	2.1-6.7:	1.6-6.7:	2.1-6.7:
	ļ	Wet	Wet	Wet	Wet	Wet	Wet	Moist	Moist	Wet	Wet	Wet	Wet
								3.3-6.7:	4.9-6.7:				
	 	 		 				Wet	Wet			l I	
Deerwood	B/D	0.0-1.6:	0.0-2.5:	0.0:	0.0:	0.0:	0.0-0.5:	0.0-0.8:	0.0-1.6:	0.0-1.3:	0.0-0.8:	0.0-0.3:	0.0-1.3:
		Moist	Moist	Moist*	Moist*	Moist*	Moist	Moist	Moist	Moist	Moist	Moist	Moist
		1.6-6.7:	2.5-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.5-6.7:	0.8-6.7:	1.6-6.7:	1.3-6.7:	0.8-6.7:	0.3-6.7:	1.3-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Karlstad	   A	0.0-5.4:	0.0-6.2:	0.0-4.1:	0.0-3.0:	0.0-3.8:	0.0:	0.0-0.2:	0.0-0.3:	0.0-0.2:	0.0-4.6:	0.0-4.1:	0.0-4.9:
		Moist	Moist	Moist	Moist	Moist	Dry*	Dry	Dry	Dry	Moist	Moist	Moist
		5.4-6.7:	1	4.1-6.7:	3.0-6.7:	3.8-6.7:	0.0-4.4:	0.2-6.7:	0.3-6.7:	0.2-4.9:	4.6-6.7:	4.1-6.7:	4.9-6.7:
		Wet	Wet	Wet	Wet	Wet	Moist	Moist	Moist	Moist	Wet	Wet	Wet
							4.4-6.7:			4.9-6.7:			
							Wet			Wet			

Table 26.--Soil Moisture Status by Depth--Continued

and	Hydro-  logic  group	January 	February 	March	April 	May 	June 	July	August 	September 	October	November	Decembe
1191:	 	 											
Redby	   B 	0.0-3.3:   Moist	0.0-4.1:   Moist	0.0-3.3:   Moist	0.0-1.5:   Moist	0.0-1.8:   Moist	0.0: Dry*	0.0-0.2: Dry	0.0-0.3: Dry	0.0-0.2: Dry	0.0-3.0:   Moist	0.0-2.5:   Moist	0.0-3.0:   Moist
	 	3.3-6.7:   Wet	4.1-6.7:   Wet	3.3-6.7:   Wet	1.5-6.7:   Wet	1.8-6.7:   Wet	0.0-2.5:   Moist	0.2-4.9:   Moist	0.3-6.7:   Moist	0.2-4.9:   Moist	3.0-6.7:   Wet	2.5-6.7: Wet	3.0-6.7:   Wet
	 	 					2.5-6.7:   Wet	4.9-6.7:   Wet		4.9-6.7:   Wet			
1206:	 												
Cormant	A/D	0.0-2.5:	0.0-3.3:	0.0-2.1:	0.0-0.5:	0.0-1.3:	0.0-1.6:	0.0:	0.0:	0.0-3.0:	0.0-2.1:	0.0-1.6:	0.0-2.1:
		Moist	Moist	Moist	Moist	Moist	Moist	Dry*	Dry*	Moist	Moist	Moist	Moist
		2.5-6.7:	3.3-6.7:	2.1-6.7:	0.5-6.7:	1.3-6.7:	1.6-6.7:	0.0-3.3:	0.0-4.9:	3.0-6.7:	2.1-6.7:	1.6-6.7:	2.1-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Moist	Moist	Wet	Wet	Wet	Wet
	 							3.3-6.7:   Wet	4.9-6.7:   Wet				
Redby	   B	  0.0-3.3:	0.0-4.1:	0.0-3.3:	0.0-1.5:	0.0-1.8:	0.0:	0.0-0.2:	0.0-0.3:	0.0-0.2:	0.0-3.0:	0.0-2.5:	0.0-3.0:
		Moist	Moist	Moist	Moist	Moist	Dry*	Dry	Dry	Dry	Moist	Moist	Moist
		3.3-6.7:	4.1-6.7:	3.3-6.7:	1.5-6.7:	1.8-6.7:	0.0-2.5:	0.2-4.9:	0.3-6.7:	0.2-4.9:	3.0-6.7:	2.5-6.7:	3.0-6.7:
		Wet	Wet	Wet	Wet	Wet	Moist	Moist	Moist	Moist	Wet	Wet	Wet
							2.5-6.7:	4.9-6.7:		4.9-6.7:			
	 	 					Wet	Wet		Wet			
Hiwood	   A	0.0-5.4:		0.0-4.1:	0.0-2.5:	0.0-2.8:	0.0:	0.0-0.3:	0.0-0.5:	1	1	0.0-4.1:	0.0-4.9:
		Moist	Moist	Moist	Moist	Moist	Dry*	Dry	Dry	Dry	Moist	Moist	Moist
		5.4-6.7:	6.2-6.7:	4.1-6.7:	2.5-6.7:	2.8-6.7:	0.0-3.3:	0.3-6.7:	0.5-6.7:	0.2-4.9:	4.6-6.7:	4.1-6.7:	4.9-6.7:
		Wet	Wet	Wet	Wet	Wet	Moist	Moist	Moist	Moist	Wet	Wet	Wet
							3.3-6.7:		ļ	4.9-6.7:			
	 	 				l I	Wet			Wet			
Leafriver	A/D	0.0-1.6:		0.0:	0.0:	0.0:	0.0-0.5:	0.0-0.8:	0.0-1.6:	0.0-1.3:	0.0-0.8:	0.0-0.3:	0.0-1.3:
		Moist	Moist	Moist*	Moist*	Moist*	Moist	Moist	Moist	Moist	Moist	Moist	Moist
	 	1.6-6.7:   Wet	2.5-6.7: Wet	0.0-6.7:   Wet	0.0-6.7:   Wet	0.0-6.7: Wet	0.5-6.7: Wet	0.8-6.7:   Wet	1.6-6.7:   Wet	1.3-6.7:   Wet	0.8-6.7: Wet	0.3-6.7: Wet	1.3-6.7:   Wet
	 	wet 	wet	Wet	wet	wet	wet	wet	wet	wet	wet	wet	wet
1214:													
Mustinka	C/D	0.0-2.1:	1	0.0-1.3:	0.0:	0.0-0.5:	0.0-1.3:	0.0-2.1:	0.0-3.0:	0.0-2.5:	0.0-1.6:	0.0-1.3:	0.0-1.6:
		Moist	Moist	Moist	Moist*	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist
		2.1-6.7:	1	1.3-6.7:	0.0-6.7:	0.5-6.7:	1.3-6.7:	2.1-6.7:	3.0-6.7:	2.5-6.7:	1.6-6.7:	1.3-6.7:	1.6-6.7:
	 	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Espelie	B/D	0.0-2.1:	1	0.0-2.3:	0.0-0.5:	0.0-0.8:	0.0-1.6:	0.0-3.0:	0.0-3.8:	0.0-3.3:	0.0-2.5:	0.0-1.6:	0.0-2.0:
		Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist
		2.1-6.7:	2.6-6.7:	2.3-6.7:	0.5-6.7:	0.8-6.7:	1.6-6.7:	3.0-6.7:	3.8-6.7:	3.3-6.7:	2.5-6.7:	1.6-6.7:	2.0-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet

Map symbol and component name	Hydro- logic group	January	February	March	April	May	June	July	August	September	October	November	Decembe
1214:		 											
Wildwood	D 	0.0-1.6:   Moist  1.6-6.7:	0.0-2.5:   Moist  2.5-6.7:	0.0:   Moist*  0.0-6.7:	0.0:   Moist*  0.0-6.7:	0.0:   Moist*  0.0-6.7:	0.0-0.5:   Moist  0.5-6.7:	0.0-0.8:   Moist  0.8-6.7:	0.0-1.6:   Moist  1.6-6.7:	0.0-1.3:   Moist  1.3-6.7:	0.0-0.8:   Moist  0.8-6.7:	0.0-0.3:   Moist  0.3-6.7:	0.0-1.3:   Moist  1.3-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Dalbo	   B       	  0.0-5.4:   Moist  5.4-6.7:   Wet 	0.0-6.2:   Moist   6.2-6.7:   Wet	0.0-5.4:   Moist   5.4-6.7:   Wet 	0.0-2.5:   Moist  2.5-6.7:   Wet 	0.0-3.0:   Moist  3.0-6.7:   Wet 	0.0-3.3:   Moist   3.3-6.7:   Wet 	0.0-4.9:   Moist  4.9-6.7:   Wet 	0.0:   Dry*   0.0-6.7:   Moist   6.7:   Wet*	0.0-4.1:   Moist  4.1-6.7:   Wet	0.0-3.3:   Moist   3.3-6.7:   Wet 	0.0-3.0:   Moist  3.0-6.7:   Wet	0.0-3.8:   Moist   3.8-6.7:   Wet 
1274B:	į	į	į	į	į	į	İ	į	į	į	į	İ	ļ
Redby	   B       	0.0-3.3:   Moist  3.3-6.7:   Wet 	0.0-4.1:   Moist   4.1-6.7:   Wet 	0.0-3.3:   Moist   3.3-6.7:   Wet 	0.0-1.5:   Moist  1.5-6.7:   Wet 	0.0-1.8:   Moist  1.8-6.7:   Wet 	0.0:   Dry*   0.0-2.5:   Moist   2.5-6.7:   Wet	0.0-0.2:   Dry   0.2-4.9:   Moist   4.9-6.7:   Wet	0.0-0.3:   Dry   0.3-6.7:   Moist 	0.0-0.2:   Dry   0.2-4.9:   Moist   4.9-6.7:   Wet	0.0-3.0:   Moist   3.0-6.7:   Wet 	0.0-2.5:   Moist  2.5-6.7:   Wet	0.0-3.0:   Moist   3.0-6.7:   Wet 
Hiwood	A   A       	   0.0-5.4:   Moist  5.4-6.7:   Wet 	0.0-6.2:   Moist   6.2-6.7:   Wet 	0.0-4.1:   Moist  4.1-6.7:   Wet 	0.0-2.5:   Moist   2.5-6.7:   Wet 	0.0-2.8:   Moist   2.8-6.7:   Wet 	0.0:   Dry*   0.0-3.3:   Moist   3.3-6.7:   Wet	0.0-0.3:   Dry   0.3-6.7:   Moist 	0.0-0.5:   Dry  0.5-6.7:   Moist 	0.0-0.2:   Dry   0.2-4.9:   Moist   4.9-6.7:   Wet	0.0-4.6:   Moist   4.6-6.7:   Wet 	0.0-4.1:   Moist  4.1-6.7:   Wet	0.0-4.9:   Moist  4.9-6.7:   Wet 
Leafriver,	 												
wooded	A/D     	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-2.5:   Moist   2.5-6.7:   Wet	0.0:   Moist*   0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.8:   Moist   0.8-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-0.8:   Moist   0.8-6.7:   Wet	0.0-0.3:   Moist   0.3-6.7:   Wet	0.0-1.3:   Moist   1.3-6.7:   Wet
Clearriver	B       	0.0-5.4:   Moist  5.4-6.7:   Wet 	0.0-6.2:   Moist  6.2-6.7:   Wet 	0.0-4.1:   Moist   4.1-6.7:   Wet 	0.0-3.0:   Moist  3.0-6.7:   Wet 	0.0-3.8:   Moist  3.8-6.7:   Wet 	0.0:   Dry*  0.0-4.4:   Moist  4.4-6.7:   Wet	0.0-0.2:   Dry  0.2-6.7:   Moist 	0.0-0.3:   Dry  0.3-6.7:   Moist 	0.0-0.2:   Dry   0.2-4.9:   Moist   4.9-6.7:   Wet	0.0-4.6:   Moist  4.6-6.7:   Wet 	0.0-4.1:   Moist  4.1-6.7:   Wet	0.0-4.9:   Moist   4.9-6.7:   Wet 
Cormant	   A/D       	  0.0-2.5:   Moist  2.5-6.7:   Wet 	0.0-3.3:   Moist   3.3-6.7:   Wet 	  0.0-2.1:   Moist  2.1-6.7:   Wet 	0.0-0.5:   Moist   0.5-6.7:   Wet 	0.0-1.3:   Moist  1.3-6.7:   Wet 	0.0-1.6:   Moist  1.6-6.7:   Wet 	0.0:   Dry*   0.0-3.3:   Moist   3.3-6.7:   Wet	0.0:   Dry*   0.0-4.9:   Moist   4.9-6.7:   Wet	0.0-3.0:   Moist   3.0-6.7:   Wet 	  0.0-2.1:   Moist  2.1-6.7:   Wet 	0.0-1.6:   Moist  1.6-6.7:   Wet 	  0.0-2.1:   Moist  2.1-6.7:   Wet 

Table 26.--Soil Moisture Status by Depth--Continued

See footnote at end of table.

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro-  logic  group	January 	February 	March   	April 	May	June 	July 	August 	September   	October	November	Decembe
1274B:		 											
Zimmerman	A     	0.0-6.7:   Moist 	0.0-6.7:   Moist 	0.0-6.7:   Moist 	0.0-6.7:   Moist 	0.0-6.7:   Moist 	0.0-0.2:   Dry  0.2-6.7:   Moist	0.0-0.3:   Dry  0.3-6.7:   Moist	0.0-0.7:   Dry  0.7-6.7:   Moist	0.0-0.5:   Dry  0.5-6.7:   Moist	0.0-6.7:   Moist 	0.0-6.7:   Moist 	0.0-6.7:   Moist 
1298:		 										i	
Borup	B/D     	0.0-3.0:   Moist  3.0-6.7:   Wet	0.0-3.3:   Moist  3.3-6.7:   Wet	0.0-2.1:   Moist  2.1-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-3.0:   Moist  3.0-6.7:   Wet	0.0-3.8:   Moist  3.8-6.7:   Wet	0.0-3.3:   Moist  3.3-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-2.1:   Moist  2.1-6.7:   Wet
Augsburg,	 	 	1			l I			l I		l I		
depressional	B/D     	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-3.0:   Moist  3.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-2.5:   Moist  2.5-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet
Glyndon	   B	  0.0-4.9:	0.0-5.7:	0.0-4.9:	  0.0-1.6:	0.0-2.0:	0.0-3.3:	0.0:	0.0:	0.0-4.9:	0.0-4.6:	0.0-3.3:	0.0-4.1:
Giyildon	B       	Moist  4.9-6.7:   Wet 	Moist  5.7-6.7:   Wet 	Moist  4.9-6.7:   Wet 	Moist  1.6-6.7:   Wet 	Moist  2.0-6.7:   Wet 	Moist  3.3-6.7:   Wet 	Dry*  0.0-5.2:   Moist  5.2-6.7:	Dry*  0.0-6.7:   Moist  6.7:   Wet*	Moist  4.9-6.7:   Wet 	Moist  4.6-6.7:   Wet 	Moist  3.3-6.7:   Wet 	Moist  4.1-6.7:   Wet 
Sago	D     	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-2.5:   Moist  2.5-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.5:   Moist   0.5-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-0.8:   Moist   0.8-6.7:   Wet	0.0-0.3:   Moist   0.3-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet
Skime	A	0.0-5.4:		0.0-4.1:	0.0-2.5:	0.0-3.0:	0.0:	0.0-0.3:	0.0-0.5:	0.0-0.2:	0.0-4.6:	0.0-4.1:	0.0-4.9:
	     	Moist  5.4-6.7:   Wet 	Moist  6.2-6.7:   Wet 	Moist  4.1-6.7:   Wet 	Moist  2.5-6.7:   Wet 	Moist  3.0-6.7:   Wet 	Dry*  0.0-3.3:   Moist  3.3-6.7:   Wet	Dry  0.3-6.7:   Moist 	Dry  0.5-6.7:   Moist 	Dry  0.2-4.9:   Moist  4.9-6.7:   Wet	Moist  4.6-6.7:   Wet 	Moist  4.1-6.7:   Wet 	Moist  4.9-6.7:   Wet 
1302:	 	 									 	 	
Foldahl	   B     	   0.0-5.4:   Moist   5.4-6.7:   Wet 	0.0-5.7:   Moist   5.7-6.7:   Wet 	0.0-4.6:   Moist   4.6-6.7:   Wet 	0.0-2.5:   Moist  2.5-6.7:   Wet 	0.0-3.1:   Moist  3.1-6.7:   Wet 	0.0:   Dry*  0.0-3.8:   Moist  3.8-6.7:   Wet	0.0-0.2:   Dry   0.2-4.9:   Moist   4.9-6.7:   Wet	0.0-0.3:   Dry   0.3-6.7:   Moist   6.7:   Wet*	0.0:   Dry*   0.0-4.1:   Moist   4.1-6.7:	0.0-3.8:   Moist  3.8-6.7:   Wet 	0.0-3.3:   Moist  3.3-6.7:   Wet 	0.0-4.1:   Moist  4.1-6.7:   Wet 

Table 26.--Soil Moisture Status by Depth--Continued

and	Hydro-  logic  group	January	February	March	April	May	June	July	August	September	October	November	Decembe
1302:	 	 		 									
Kratka	B/D	0.0-3.0: Moist	Moist	0.0-2.1:   Moist	0.0-0.5:   Moist	0.0-0.8:   Moist	0.0-1.6: Moist	0.0-3.3:   Moist	0.0-4.1:   Moist	0.0-3.3: Moist	0.0-2.5: Moist	0.0-1.6:   Moist	0.0-2.1:   Moist
	   	3.0-6.7:   Wet	3.3-6.7:   Wet	2.1-6.7:   Wet	0.5-6.7:   Wet	0.8-6.7:   Wet	1.6-6.7:   Wet	3.3-6.7:   Wet	4.1-6.7:   Wet	3.3-6.7:   Wet	2.5-6.7:   Wet	1.6-6.7:   Wet	2.1-6.7:   Wet
Foxhome	   B	0.0-5.4:		0.0-4.6:	0.0-2.5:	0.0-3.0:	0.0:	0.0-0.2:	0.0-0.3:	0.0:	0.0-3.9:	0.0-3.3:	0.0-4.6:
		Moist	Moist	Moist	Moist	Moist	Dry*	Dry	Dry	Dry*	Moist	Moist	Moist
		5.4-6.7:	5.7-6.7:	4.6-6.7:	2.5-6.7:	3.0-6.7:	0.0-3.6:	0.2-5.4:	0.3-6.7:	0.0-4.6:	3.9-6.7:	3.3-6.7:	4.6-6.7:
		Wet	Wet	Wet	Wet	Wet	Moist	Moist	Moist	Moist	Wet	Wet	Wet
	 	 					3.6-6.7:   Wet	5.4-6.7:   Wet	6.7:   Wet*	4.6-6.7:   Wet			
1304:	 	 		[ [									
Glyndon	В	0.0-4.9:	0.0-5.7:	0.0-4.9:	0.0-2.5:	0.0-2.8:	0.0-3.3:	0.0:	0.0:	0.0-4.9:	0.0-4.6:	0.0-3.3:	0.0-4.1:
-	İ	Moist	Moist	Moist	Moist	Moist	Moist	Dry*	Dry*	Moist	Moist	Moist	Moist
	İ	4.9-6.7:	5.7-6.7:	4.9-6.7:	2.5-6.7:	2.8-6.7:	3.3-6.7:	0.0-5.2:	0.0-6.7:	4.9-6.7:	4.6-6.7:	3.3-6.7:	4.1-6.7:
	İ	Wet	Wet	Wet	Wet	Wet	Wet	Moist	Moist	Wet	Wet	Wet	Wet
	İ	i	i	i	i	i		5.2-6.7:	6.7:	j	i	i	i
	İ	į		į	į	į	į	Wet	Wet*		į	į	į
Borup	B/D	0.0-3.0:	1	0.0-2.1:	0.0-0.5:	0.0-0.8:	0.0-1.3:	0.0-3.0:	0.0-3.8:	0.0-3.3:	0.0-1.6:	0.0-1.3:	0.0-2.1:
		Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist
		3.0-6.7:	3.3-6.7:	2.1-6.7:	0.5-6.7:	0.8-6.7:	1.3-6.7:	3.0-6.7:	3.8-6.7:	3.3-6.7:	1.6-6.7:	1.3-6.7:	2.1-6.7:
		Wet 	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Skime	A	0.0-5.4:	1	0.0-4.1:	0.0-2.5:	0.0-3.0:	0.0:	0.0-0.3:	0.0-0.5:	0.0-0.2:	0.0-4.6:	0.0-4.1:	0.0-4.9:
		Moist	Moist	Moist	Moist	Moist	Dry*	Dry	Dry	Dry	Moist	Moist	Moist
	 	5.4-6.7:   Wet	6.2-6.7:	4.1-6.7:   Wet	2.5-6.7:	3.0-6.7:   Wet	0.0-3.3:   Moist	0.3-6.7:   Moist	0.5-6.7:	0.2-4.9: Moist	4.6-6.7:   Wet	4.1-6.7:   Wet	4.9-6.7:   Wet
	 		wet	Wet 	Wet	wet	Moist  3.3-6.7:	MOIST	Moist	MOIST  4.9-6.7:	wet	wet	wet
	 	 					Wet			Wet			
1305:	 	 		 									
Hilaire	В	0.0-5.4:	0.0-5.7:	0.0-4.6:	0.0-2.5:	0.0-3.0:	0.0-3.8:	0.0-0.2:	0.0-0.3:	0.0:	0.0-3.8:	0.0-3.3:	0.0-4.1:
		Moist	Moist	Moist	Moist	Moist	Moist	Dry	Dry	Dry*	Moist	Moist	Moist
		5.4-6.7:	5.7-6.7:	4.6-6.7:	2.5-6.7:	3.0-6.7:	3.8-6.7:	0.2-4.6:	0.3-6.7:	0.0-4.1:	3.8-6.7:	3.3-6.7:	4.1-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Moist	Moist	Moist	Wet	Wet	Wet
								4.6-6.7:	6.7:	4.1-6.7:			
	 	 						Wet	Wet*	Wet			
Espelie	B/D	0.0-2.1:	0.0-2.6:	0.0-2.3:	0.0-0.5:	0.0-0.8:	0.0-1.6:	0.0-3.0:	0.0-3.8:	0.0-3.3:	0.0-2.5:	0.0-1.6:	0.0-2.0:
=		Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist
		2.1-6.7:	2.6-6.7:	2.3-6.7:	0.5-6.7:	0.8-6.7:	1.6-6.7:	3.0-6.7:	3.8-6.7:	3.3-6.7:	2.5-6.7:	1.6-6.7:	2.0-6.7:
	i	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet

Table 26.--Soil Moisture Status by Depth--Continued

and	Hydro- logic group	January   	February	March	April	May	June	July	August	September	October	November	Decembe:
1305:		 								l I		ļ	
Grano	     	0.0-2.1:   Moist   2.1-6.7:   Wet	0.0-2.5:   Moist  2.5-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-2.1:   Moist  2.1-6.7:   Wet	0.0-3.0:   Moist  3.0-6.7:   Wet	0.0-2.5:   Moist  2.5-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet
Redby	   B     	0.0-3.3:   Moist   3.3-6.7:   Wet 	0.0-4.1:   Moist   4.1-6.7:   Wet 	0.0-3.3:   Moist   3.3-6.7:   Wet 	0.0-1.5:   Moist  1.5-6.7:   Wet 	0.0-1.8:   Moist  1.8-6.7:   Wet 	0.0:   Dry*   0.0-2.5:   Moist   2.5-6.7:   Wet	0.0-0.2:   Dry   0.2-4.9:   Moist   4.9-6.7:   Wet	0.0-0.3:   Dry   0.3-6.7:   Moist 	0.0-0.2:   Dry   0.2-4.9:   Moist   4.9-6.7:   Wet	0.0-3.0:   Moist   3.0-6.7:   Wet 	0.0-2.5:   Moist   2.5-6.7:   Wet	0.0-3.0:   Moist  3.0-6.7:   Wet 
1314:													
Tacoosh	   B/D   	0.0-1.3:   Moist   1.3-6.7:   Wet	0.0-2.1:   Moist  2.1-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.1:   Moist  1.1-6.7:   Wet	0.0-0.5:   Moist   0.5-6.7:   Wet	0.0-0.3:   Moist  0.3-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet
Rifle	   A/D   	  0.0-1.0:   Moist  1.0-6.7:   Wet	0.0-1.6:   Moist   1.6-6.7:   Wet	  0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*   0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.3:   Moist   0.3-6.7:   Wet	  0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.6:   Moist   1.6-6.7:   Wet	0.0-1.1:   Moist  1.1-6.7:   Wet	  0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.3:   Moist   0.3-6.7:   Wet	0.0-0.8:   Moist   0.8-6.7:   Wet
Sax	   D   	  0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-2.5:   Moist   2.5-6.7:   Wet	  0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*   0.0-6.7:   Wet	0.0:   Moist*   0.0-6.7:   Wet	0.0-0.5:   Moist   0.5-6.7:   Wet	  0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	  0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-0.3:   Moist   0.3-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet
1316:												-	
Wheatville	   B       	0.0-5.4:   Moist  5.4-6.7:   Wet 	0.0-5.7:   Moist   5.7-6.7:   Wet 	0.0-4.6:   Moist   4.6-6.7:   Wet 	0.0-2.5:   Moist  2.5-6.7:   Wet 	0.0-2.5:   Moist  2.5-6.7:   Wet 	0.0-3.0:   Moist   3.0-6.7:   Wet 	0.0-4.6:   Moist  4.6-6.7:   Wet 	0.0:   Dry*   0.0-6.7:   Moist   6.7:   Wet*	0.0-4.1:   Moist   4.1-6.7:   Wet	0.0-3.8:   Moist   3.8-6.7:   Wet 	0.0-3.3:   Moist   3.3-6.7:   Wet 	0.0-4.1:   Moist  4.1-6.7:   Wet 
Augsburg	   B/D   	  0.0-2.1:   Moist  2.1-6.7:   Wet	  0.0-2.6:   Moist  2.6-6.7:   Wet	  0.0-2.3:   Moist  2.3-6.7:   Wet	  0.0-0.5:   Moist  0.5-6.7:   Wet	  0.0-0.8:   Moist  0.8-6.7:   Wet	  0.0-1.6:   Moist  1.6-6.7:   Wet	  0.0-3.0:   Moist  3.0-6.7:   Wet	  0.0-3.8:   Moist  3.8-6.7:   Wet	  0.0-3.3:   Moist  3.3-6.7:   Wet	  0.0-2.5:   Moist  2.5-6.7:   Wet	  0.0-1.6:   Moist  1.6-6.7:   Wet	  0.0-2.0:   Moist  2.0-6.7:   Wet
Grano	   D   	  0.0-2.1:   Moist  2.1-6.7:   Wet	  0.0-2.5:   Moist  2.5-6.7:   Wet	  0.0-1.3:   Moist  1.3-6.7:   Wet	  0.0:   Moist*  0.0-6.7:   Wet	  0.0-0.5:   Moist  0.5-6.7:   Wet	  0.0-1.3:   Moist  1.3-6.7:   Wet	  0.0-2.1:   Moist  2.1-6.7:   Wet	  0.0-3.0:   Moist  3.0-6.7:   Wet	  0.0-2.5:   Moist  2.5-6.7:   Wet	  0.0-1.6:   Moist  1.6-6.7:   Wet	  0.0-1.3:   Moist  1.3-6.7:   Wet	  0.0-1.6:   Moist  1.6-6.7:   Wet

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro-  logic  group	January 	February	March	April	May	June	July	August	September	October	November	Decembe:
1326:		   									   		
Augsburg, depressional	   B/D     	  0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-3.0:   Moist  3.0-6.7:   Wet	  0.0:   Moist*  0.0-6.7:   Wet	  0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.6:   Moist   1.6-6.7:   Wet	0.0-2.5:   Moist   2.5-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet
Wabanica,		 				İ		İ	İ				İ
depressional	   C   	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0:   Moist*   0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-0.8:   Moist   0.8-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.8:   Moist   0.8-6.7:   Wet
Sax	   D   	  0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-2.5:   Moist  2.5-6.7:   Wet	0.0:   Moist*   0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-0.8:   Moist   0.8-6.7:   Wet	0.0-0.3:   Moist  0.3-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet
Espelie	   B/D   	0.0-2.1:   Moist  2.1-6.7:   Wet	0.0-2.6:   Moist  2.6-6.7:   Wet	0.0-2.3:   Moist   2.3-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-3.0:   Moist  3.0-6.7:   Wet	0.0-3.8:   Moist  3.8-6.7:   Wet	0.0-3.3:   Moist  3.3-6.7:   Wet	0.0-2.5:   Moist   2.5-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-2.0:   Moist   2.0-6.7:   Wet
Zippel	   B/D   	  0.0-3.0:   Moist  3.0-6.7:   Wet	0.0-3.3:   Moist  3.3-6.7:   Wet	0.0-2.1:   Moist   2.1-6.7:   Wet	0.0-0.5:   Moist   0.5-6.7:   Wet	0.0-0.8:   Moist   0.8-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-3.0:   Moist   3.0-6.7:   Wet	0.0-3.8:   Moist  3.8-6.7:   Wet	0.0-3.3:   Moist  3.3-6.7:   Wet	  0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	  0.0-2.1:   Moist  2.1-6.7:   Wet
1327B:		 						}					
Karlstad	A       	0.0-5.4:   Moist  5.4-6.7:   Wet 	0.0-6.2:   Moist   6.2-6.7:   Wet 	0.0-4.1:   Moist   4.1-6.7:   Wet 	0.0-3.0:   Moist  3.0-6.7:   Wet 	0.0-3.8:   Moist  3.8-6.7:   Wet 	0.0:   Dry*   0.0-4.4:   Moist   4.4-6.7:   Wet	0.0-0.2:   Dry  0.2-6.7:   Moist 	0.0-0.3:   Dry   0.3-6.7:   Moist 	0.0-0.2:   Dry   0.2-4.9:   Moist   4.9-6.7:   Wet	0.0-4.6:   Moist   4.6-6.7:   Wet 	0.0-4.1:   Moist  4.1-6.7:   Wet 	0.0-4.9:   Moist   4.9-6.7:   Wet 
Marquette	   A   	  0.0-6.7:   Moist 	  0.0-6.7:   Moist 	  0.0-6.7:   Moist 	  0.0-6.7:   Moist 	  0.0:   Dry*  0.0-6.7:   Moist		  0.0-0.5:   Dry  0.5-6.7:   Moist	  0.0-0.7:   Dry  0.7-6.7:   Moist	  0.0-0.5:   Dry  0.5-6.7:   Moist	  0.0:   Dry*  0.0-6.7:   Moist	  0.0-6.7:   Moist 	  0.0-6.7:   Moist 

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January 	February	March	April	May	June	July	August	September	October	November	December
1327B:		 											
Sahkahtay	B         	0.0-3.0:   Moist  3.0-6.7:   Wet 	0.0-3.3:   Moist   3.3-6.7:   Wet 	0.0-2.5:   Moist   2.5-6.7:   Wet 	0.0-0.3:   Moist   0.3-6.7:   Wet 	0.0-0.8:   Moist   0.8-6.7:   Wet 	0.0-1.6:   Moist   1.6-6.7:   Wet 	0.0:   Dry*  0.0-2.5:   Moist  2.5-6.7:   Wet	0.0:   Dry*   0.0-3.3:   Moist   3.3-6.7:   Wet	0.0-2.5:   Moist   2.5-6.7:   Wet 	0.0-2.1:   Moist  2.1-6.7:   Wet 	0.0-1.6:   Moist  1.6-6.7:   Wet 	0.0-2.1:   Moist  2.1-6.7:   Wet 
Redby	   B       	0.0-3.3:   Moist   3.3-6.7:   Wet 	0.0-4.1: Moist 4.1-6.7: Wet	0.0-3.3:   Moist   3.3-6.7:   Wet 	0.0-1.5:   Moist   1.5-6.7:   Wet 	0.0-1.8:   Moist   1.8-6.7:   Wet 	0.0:   Dry*  0.0-2.5:   Moist  2.5-6.7:   Wet	0.0-0.2:   Dry   0.2-4.9:   Moist   4.9-6.7:   Wet	0.0-0.3:   Dry   0.3-6.7:   Moist 	0.0-0.2:   Dry   0.2-4.9:   Moist   4.9-6.7:   Wet	0.0-3.0:   Moist   3.0-6.7:   Wet 	0.0-2.5:   Moist  2.5-6.7:   Wet 	0.0-3.0:   Moist   3.0-6.7:   Wet 
1328: Northwood,		ļ											
wooded	   B/D   	  0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-2.5:   Moist  2.5-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-0.3:   Moist  0.3-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet
Berner, wooded	A/D     	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-2.1:   Moist  2.5-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.1:   Moist  1.1-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.3:   Moist  0.3-6.7:   Wet	0.0-0.8:   Moist   0.8-6.7:   Wet
Grygla	   B/D   	  0.0-3.0:   Moist  3.0-6.7:   Wet	0.0-3.3:   Moist  3.3-6.7:   Wet	0.0-2.1:   Moist   2.1-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-3.3:   Moist  3.3-6.7:   Wet	0.0-4.1:   Moist  4.1-6.7:   Wet	0.0-3.3:   Moist  3.3-6.7:   Wet	0.0-2.5:   Moist   2.5-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-2.1:   Moist  2.1-6.7:   Wet
1333:		 											
Dora, wooded	B/D     	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-2.1:   Moist  2.5-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.1:   Moist  1.1-6.7:   Wet	0.0-0.5:   Moist   0.5-6.7:   Wet	0.0-0.3:   Moist  0.3-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet
Lupton	A/D     	0.0-1.0:   Moist  1.0-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0:   Moist*   0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.8:   Moist   0.8-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.1:   Moist  1.1-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.3:   Moist  0.3-6.7:   Wet	0.0-0.8:   Moist   0.8-6.7:   Wet
Wildwood	   D   	  0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-2.5:   Moist   2.5-6.7:   Wet	  0.0:   Moist*  0.0-6.7:   Wet	  0.0:   Moist*  0.0-6.7:   Wet	  0.0:   Moist*  0.0-6.7:   Wet	0.0-0.5:   Moist   0.5-6.7:   Wet	  0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.6:   Moist   1.6-6.7:   Wet	  0.0-1.3:   Moist  1.3-6.7:   Wet	  0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-0.3:   Moist   0.3-6.7:   Wet	0.0-1.3:   Moist   1.3-6.7:   Wet

Map symbol and component name	Hydro- logic group	January 	February	March	April	May	June	July	August	September	October	November	Decembe:
		<u> </u>	1		1	I	İ	1	1	l	<u> </u>	1	<del> </del>
1333: Auganaush	   C   	  0.0-2.5:   Moist  2.5-6.7:   Wet	0.0-3.0:   Moist  3.0-6.7:   Wet	  0.0-1.6:   Moist  1.6-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.8:   Moist   0.8-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet		0.0-3.3:   Moist   3.3-6.7:   Wet	0.0-2.6:   Moist  2.6-6.7:   Wet	  0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-2.0:   Moist   2.0-6.7:   Wet
1356: Water, miscellaneous.		       		     							     		
1399B: Two Inlets	   A   	  0.0-6.7:   Moist 	0.0-6.7:   Moist 	  0.0-6.7:   Moist 	  0.0-6.7:   Moist 	  0.0-6.7:   Moist 	  0.0-0.2:   Dry  0.2-6.7:   Moist	  0.0-0.3:   Dry  0.3-6.7:   Moist	  0.0-0.7:   Dry  0.7-6.7:   Moist	0.0-0.5:   Dry   0.5-6.7:   Moist	  0.0-6.7:   Moist 	0.0-6.7:   Moist 	  0.0-6.7:   Moist 
Wurtsmith	A   A 	0.0-5.4:   Moist  5.4-6.7:   Wet 	0.0-6.2:   Moist   6.2-6.7:   Wet 	0.0-4.1:   Moist   4.1-6.7:   Wet 	0.0-2.5:   Moist  2.5-6.7:   Wet 	0.0-2.8:   Moist   2.8-6.7:   Wet 	0.0:   Dry*   0.0-3.3:   Moist   3.3-6.7:   Wet	0.0-0.3:   Dry   0.3-6.7:   Moist 	0.0-0.5:   Dry  0.5-6.7:   Moist 	0.0-0.3:   Dry   0.3-4.9:   Moist   4.9-6.7:   Wet	0.0-4.6:   Moist   4.6-6.7:   Wet 	0.0-4.1:   Moist   4.1-6.7:   Wet 	0.0-4.9:   Moist  4.9-6.7:   Wet 
Zimmerman	A   	0.0-6.7:   Moist 	0.0-6.7:   Moist 	0.0-6.7:   Moist 	0.0-6.7:   Moist 	0.0-6.7:   Moist 	0.0-0.2:   Dry  0.2-6.7:   Moist	0.0-0.3:   Dry  0.3-6.7:   Moist	0.0-0.7:   Dry  0.7-6.7:   Moist	0.0-0.5:   Dry  0.5-6.7:   Moist	0.0-6.7:   Moist 	0.0-6.7:   Moist 	0.0-6.7:   Moist 
Meehan	   B     	  0.0-3.3:   Moist  3.3-6.7:   Wet 	0.0-4.1:   Moist   4.1-6.7:   Wet 	0.0-3.3:   Moist   3.3-6.7:   Wet 	0.0-1.5:   Moist   1.5-6.7:   Wet 	0.0-1.8:   Moist  1.8-6.7:   Wet 	0.0:   Dry*   0.0-2.5:   Moist   2.5-6.7:   Wet	0.0-0.2:   Dry   0.2-4.9:   Moist   4.9-6.7:   Wet	0.0-0.3:   Dry   0.3-6.7:   Moist 	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-3.0:   Moist   3.0-6.7:   Wet 	0.0-2.5: Moist 2.5-6.7: Wet	
1401: Grygla, depressional	       B/D   	  0.0-1.6:   Moist  1.6-6.7:   Wet	  0.0-3.0:   Moist  3.0-6.7:   Wet	  0.0:   Moist*  0.0-6.7:   Wet	   0.0:   Moist*   0.0-6.7:   Wet	  0.0:   Moist*  0.0-6.7:   Wet	  0.0-0.8:   Moist  0.8-6.7:   Wet	  0.0-1.6:   Moist  1.6-6.7:   Wet	  0.0-2.5:   Moist  2.5-6.7:   Wet	0.0-1.6:   Moist   1.6-6.7:   Wet	  0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-0.8:   Moist   0.8-6.7:   Wet	    0.0-1.3:   Moist  1.3-6.7:   Wet
Northwood, wooded	   B/D     	  0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-2.5:   Moist   2.5-6.7:   Wet	  0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	  0.0:   Moist*  0.0-6.7:   Wet	0.0-0.5:   Moist   0.5-6.7:   Wet	0.0-0.8:   Moist   0.8-6.7:   Wet	  0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist   1.3-6.7:   Wet	  0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-0.3:   Moist   0.3-6.7:   Wet	  0.0-1.3:   Moist  1.3-6.7:   Wet

Table 26.--Soil Moisture Status by Depth--Continued

See footnote at end of table.

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro-  logic  group	January   	February 	March   	April   	May   	June	July	August	September   	October   	November	Decembe:
1401:	 			 									
Chilgren	   C 	0.0-3.0:   Moist	0.0-3.3:   Moist	0.0-2.1:   Moist	0.0-0.5:   Moist	0.0-0.8:   Moist	0.0-1.3:   Moist	0.0-3.0:   Moist	0.0-3.8: Moist	0.0-3.3:   Moist	0.0-1.6:   Moist	0.0-1.3:   Moist	0.0-2.1: Moist
	 	3.0-6.7:   Wet	3.3-6.7:   Wet	2.1-6.7:   Wet	0.5-6.7: Wet	0.8-6.7:   Wet	1.3-6.7:   Wet	3.0-6.7:   Wet	3.8-6.7: Wet	3.3-6.7:   Wet	1.6-6.7:   Wet	1.3-6.7:   Wet	2.1-6.7:   Wet
Grygla	   B/D 	0.0-3.0: Moist	0.0-3.3: Moist	0.0-2.1: Moist	0.0-0.5: Moist	0.0-0.8: Moist	0.0-1.6: Moist	0.0-3.3: Moist	0.0-4.1: Moist	0.0-3.3: Moist	0.0-2.5: Moist	0.0-1.6: Moist	0.0-2.1:
	   	3.0-6.7:   Wet	3.3-6.7:   Wet	2.1-6.7:   Wet	0.5-6.7:	0.8-6.7:	1.6-6.7:   Wet	3.3-6.7:	4.1-6.7:	3.3-6.7:   Wet	2.5-6.7:   Wet	1.6-6.7:   Wet	2.1-6.7:   Wet
L402:	   												
Leafriver,	İ	i	i	i	i	i	i	i	i	i	İ	i	i
wooded	A/D	0.0-1.6: Moist	0.0-2.5: Moist	0.0:   Moist*	0.0: Moist*	0.0: Moist*	0.0-0.5: Moist	0.0-0.8: Moist	0.0-1.6: Moist	0.0-1.3: Moist	0.0-0.8: Moist	0.0-0.3: Moist	0.0-1.3: Moist
	i I	1.6-6.7: Wet	2.5-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.5-6.7: Wet	0.8-6.7: Wet	1.6-6.7: Wet	1.3-6.7: Wet	0.8-6.7: Wet	0.3-6.7: Wet	1.3-6.7: Wet
Cormant	A/D	0.0-2.5:	0.0-3.3:	0.0-2.1:	0.0-0.5:	0.0-1.3:	0.0-1.6:	0.0:	0.0:	0.0-3.0:	0.0-2.1:	0.0-1.6:	0.0-2.1:
	ļ	Moist	Moist	Moist	Moist	Moist	Moist	Dry*	Dry*	Moist	Moist	Moist	Moist
		2.5-6.7:	3.3-6.7:	2.1-6.7:	0.5-6.7:	1.3-6.7:	1.6-6.7:	0.0-3.3:	0.0-4.9:	3.0-6.7:	2.1-6.7:	1.6-6.7:	2.1-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Moist	Moist	Wet	Wet	Wet	Wet
	 	 		 				3.3-6.7: Wet	4.9-6.7: Wet				
Tawas	   A/D	  0.0-1.3:	0.0-2.1:	0.0:	0.0:	0.0:	0.0-0.5:	0.0-0.8:	0.0-1.6:	0.0-1.1:	0.0-0.5:	0.0-0.3:	0.0-0.8:
	i '	Moist	Moist	Moist*	Moist*	Moist*	Moist	Moist	Moist	Moist	Moist	Moist	Moist
	į	1.3-6.7:	2.5-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.5-6.7:	0.8-6.7:	1.6-6.7:	1.1-6.7:	0.5-6.7:	0.3-6.7:	0.8-6.7:
	i i	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Redby	   B	0.0-3.3:	0.0-4.1:	0.0-3.3:	0.0-1.5:	0.0-1.8:	0.0:	0.0-0.2:	0.0-0.3:	0.0-0.2:	0.0-3.0:	0.0-2.5:	0.0-3.0:
		Moist	Moist	Moist	Moist	Moist	Dry*	Dry	Dry	Dry	Moist	Moist	Moist
		3.3-6.7:	4.1-6.7:	3.3-6.7:	1.5-6.7:	1.8-6.7:	0.0-2.5:	0.2-4.9:	0.3-6.7:	0.2-4.9:	3.0-6.7:	2.5-6.7:	3.0-6.7:
		Wet	Wet	Wet	Wet	Wet	Moist	Moist	Moist	Moist	Wet	Wet	Wet
	   	   		 			2.5-6.7:   Wet	4.9-6.7: Wet		4.9-6.7:   Wet			
L404:		İ		İ	i	i	i		i	i	İ	İ	İ
Berner, wooded	A/D	0.0-1.3:	0.0-2.1:	0.0:	0.0:	0.0:	0.0-0.5:	0.0-0.8:	0.0-1.6:	0.0-1.1:	0.0-0.5:	0.0-0.3:	0.0-0.8:
		Moist	Moist	Moist*	Moist*	Moist*	Moist	Moist	Moist	Moist	Moist	Moist	Moist
		1.3-6.7:	2.5-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.5-6.7:	0.8-6.7:	1.6-6.7:	1.1-6.7:	0.5-6.7:	0.3-6.7:	0.8-6.7:
	 	Wet 	Wet	Wet 	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Lupton	A/D	0.0-1.0:	0.0-1.6:	0.0:	0.0:	0.0:	0.0-0.5:	0.0-0.8:	0.0-1.6:	0.0-1.1:	0.0-0.5:	0.0-0.3:	0.0-0.8:
		Moist	Moist	Moist*	Moist*	Moist*	Moist	Moist	Moist	Moist	Moist	Moist	Moist
	!	1.0-6.7:	1.6-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.5-6.7:	0.8-6.7:	1.6-6.7:	1.1-6.7:	0.5-6.7:	0.3-6.7:	0.8-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet

Map symbol |Hydro-| January February March April May June July August September October November December and logic component name group 1404: Northwood, wooded-----B/D 0.0-1.6: 0.0-2.5: 0.0: 0.0: 0.0: 0.0-0.5: 0.0-0.8: 0.0-1.6: 0.0-1.3: 0.0-0.8: 0.0-0.3: 0.0-1.3: Moist Moist Moist\* Moist\* Moist\* Moist Moist Moist Moist Moist Moist Moist 1.6-6.7: 2.5-6.7: 0.0-6.7: 0.0-6.7: 0.0-6.7: 0.5-6.7: 0.8-6.7: 1.6-6.7: 1.3-6.7: 0.8-6.7: 0.3-6.7: 1.3-6.7: Wet Wet Wet Wet Wet Wet Wet Wet Wet Wet Wet Wet Grygla----- B/D 0.0-3.0: 0.0-3.3: 0.0-2.1: 0.0-0.5: 0.0-0.8: 0.0-1.6: 0.0-3.3: 0.0-4.1: 0.0-3.3: 0.0-2.5: 0.0-1.6: 0.0-2.1: Moist Moist Moist Moist Moist Moist Moist Moist Moist Moist Moist Moist 3.0-6.7: 3.3-6.7: 2.1-6.7: 0.5-6.7: 0.8-6.7: 1.6-6.7: 3.3-6.7: 4.1-6.7: 2.5-6.7: 1.6-6.7: 2.1-6.7: 3.3-6.7: Wet Wet Wet Wet Wet Wet Wet Wet Wet Wet Wet Wet 1405: Lallie-----D 0.0-1.3: 0.0-1.6: 0.0: 0.0: 0.0: 0.0-0.5: 0.0-1.3: 0.0-1.6: 0.0-1.3: 0.0-0.8: 0.0-0.5: 0.0-0.8: Moist Moist Moist\* Moist\* Moist\* Moist Moist Moist Moist Moist Moist Moist 1.3-6.7: 1.6-6.7: 0.0-6.7: 0.0-6.7: 0.0-6.7: 0.5-6.7: 1.3-6.7: 1.6-6.7: 1.3-6.7: 0.8-6.7: 0.5-6.7: 0.8-6.7: Wet Wet Wet Wet Wet Wet Wet Wet Wet Wet Wet Wet 0.0: 0.0-1.6: 0.0-1.3: 0.0-0.3: Sax-----0.0-1.6: 0.0-2.5: 0.0: 0.0: 0.0-0.5: 0.0-0.8: 0.0-0.8: 0.0-1.3: Moist Moist Moist\* Moist\* Moist\* Moist Moist Moist Moist Moist Moist Moist 1.6-6.7: 2.5-6.7: 0.8-6.7: 0.0-6.7: 0.0-6.7: 0.0-6.7: 0.5-6.7: 1.6-6.7: 1.3-6.7: 0.8-6.7: 0.3-6.7: 1.3-6.7: Wet Wet Wet Wet Wet Wet Wet Wet Wet Wet Wet Wet Wabanica-----0.0-3.0: 0.0-3.3: 0.0-2.1: 0.0-0.5: 0.0-0.8: 0.0-1.3: 0.0-3.0: 0.0-3.8: 0.0-3.3: 0.0-1.6: 0.0-1.3: 0.0-2.1: Moist Moist Moist Moist Moist Moist Moist Moist Moist Moist Moist Moist 3.0-6.7: |3.3-6.7: 2.1-6.7: 0.5-6.7: 0.8-6.7: 1.3-6.7: |3.0-6.7: 3.8-6.7: 3.3-6.7: 1.6-6.7: 1.3-6.7: |2.1-6.7: Wet Wet Wet Wet Wet Wet Wet Wet Wet Wet Wet Wet 1414: Nereson, very 0.0-5.9: 0.0-4.9: 0.0-2.5: 0.0-2.8: 0.0: 0.0-0.2: 0.0-3.3: cobbly-----0.0-5.4: 0.0-0.2: 0.0: 0.0-4.3: 0.0-4.6: В Moist Moist Moist Moist Moist Dry\* Dry Dry Dry\* Moist Moist Moist 5.4-6.7: |5.9-6.7: 4.9-6.7: 2.5-6.7: 2.8-6.7: 0.0-3.1: 0.2-5.7: 0.2-6.7: 0.0-4.9: 4.3-6.7: 3.3-6.7: 4.6-6.7: Wet Wet Wet Wet Wet Moist Moist Moist Moist Wet Wet Wet 3.1-6.7: |5.7-6.7: 6.7: 4.9-6.7: ------Wet Wet Wet\* Wet Percy, very cobbly---- B/D 0.0-3.0: 0.0-3.3: 0.0-2.1: 0.0-0.5: 0.0-0.8: 0.0-1.3: 0.0-3.0: 0.0-3.8: 0.0-3.3: 0.0-1.6: 0.0-1.3: 0.0-2.1: Moist Moist Moist Moist Moist Moist Moist Moist Moist Moist Moist Moist 3.0-6.7: 3.3-6.7: 2.1-6.7: 0.5-6.7: 0.8-6.7: 1.3-6.7: 3.0-6.7: 3.8-6.7: 3.3-6.7: 1.6-6.7: 1.3-6.7: 2.1-6.7:

Table 26. -- Soil Moisture Status by Depth--Continued

See footnote at end of table.

Wet

Wet

Wet

Wet

Wet

Wet

Wet

Wet

Wet

Wet

Wet

Wet

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro-  logic  group	January   	February	March	April   	May	June	July	August	September	October	November	December
1414:	 	 					1					-	
Pelan	   B   	0.0-5.4:   Moist   5.4-6.7:   Wet	0.0-5.7:   Moist  5.7-6.7:   Wet	0.0-4.6:   Moist  4.6-6.7:	0.0-2.5:   Moist  2.5-6.7:   Wet	0.0-3.0:   Moist  3.0-6.7:	0.0:   Dry*  0.0-3.6:   Moist	0.0-0.2:   Dry  0.2-5.4:   Moist	0.0-0.3:   Dry  0.3-6.7:   Moist	0.0:   Dry*  0.0-4.6:   Moist	0.0-3.9:   Moist  3.9-6.7:   Wet	0.0-3.3:   Moist  3.3-6.7:   Wet	0.0-4.6:   Moist  4.6-6.7:   Wet
	   						3.6-6.7:   Wet	5.4-6.7:   Wet	6.7:   Wet*	4.6-6.7:   Wet			
Foxhome	   B       	   0.0-5.4:   Moist   5.4-6.7:   Wet 	0.0-5.7:   Moist  5.7-6.7:   Wet 	0.0-4.6:   Moist   4.6-6.7:   Wet 	0.0-2.5:   Moist   2.5-6.7:   Wet 	0.0-3.0:   Moist  3.0-6.7:   Wet 	0.0:   Dry*  0.0-3.6:   Moist  3.6-6.7:   Wet	0.0-0.2:   Dry   0.2-5.4:   Moist   5.4-6.7:   Wet	0.0-0.3:   Dry   0.3-6.7:   Moist   6.7:   Wet*	0.0:   Dry*  0.0-4.6:   Moist  4.6-6.7:   Wet	0.0-3.9:   Moist   3.9-6.7:   Wet 	0.0-3.3:   Moist  3.3-6.7:   Wet 	0.0-4.6:   Moist   4.6-6.7:   Wet 
1428:	İ	İ	i	İ	i	i	i	İ	İ	i	İ	i	İ
Karlsruhe	A       	0.0-3.3:   Moist  3.3-6.7:   Wet 	0.0-4.1:   Moist   4.1-6.7:   Wet 	0.0-3.3:   Moist   3.3-6.7:   Wet 	0.0-2.0:   Moist   2.0-6.7:   Wet 	0.0-2.5:   Moist  2.5-6.7:   Wet 	0.0-3.0:   Moist  3.0-6.7:   Wet 	0.0:   Dry*   0.0-3.6:   Moist   3.6-6.7:   Wet	0.0-0.2:   Dry  0.2-6.7:   Moist  6.7:   Wet*	0.0:   Dry*   0.0-4.1:   Moist   4.1-6.7:   Wet	0.0-4.3:   Moist   4.3-6.7:   Wet 	0.0-2.5:   Moist  2.5-6.7:   Wet 	0.0-3.0:   Moist   3.0-6.7:   Wet 
Syrene	   B/D       	  0.0-3.0:   Moist  3.0-6.7:   Wet 	0.0-3.3:   Moist   3.3-6.7:   Wet 	  0.0-2.5:   Moist  2.5-6.7:   Wet 	0.0-0.3:   Moist   0.3-6.7:   Wet 	0.0-0.8:   Moist   0.8-6.7:   Wet 	0.0-1.6:   Moist  1.6-6.7:   Wet 	0.0:   Dry*   0.0-2.5:   Moist   2.5-6.7:   Wet	0.0:   Dry*  0.0-3.3:   Moist  3.3-6.7:   Wet	0.0-2.5:   Moist   2.5-6.7:   Wet 		0.0-1.6:   Moist   1.6-6.7:   Wet 	  0.0-2.1:   Moist  2.1-6.7:   Wet 
Ulen	   B       	0.0-3.3:   Moist   3.3-6.7:   Wet 	0.0-4.1:   Moist   4.1-6.7:   Wet 	0.0-3.3:   Moist   3.3-6.7:   Wet 	0.0-2.0:   Moist   2.0-6.7:   Wet 	0.0-2.5:   Moist  2.5-6.7:   Wet 	0.0:   Dry*  0.0-3.0:   Moist  3.0-6.7:   Wet	0.0-0.2:   Dry  0.2-4.9:   Moist  4.9-6.7:   Wet	0.0-0.3:   Dry  0.3-6.7:   Moist 	0.0:   Dry*  0.0-4.9:   Moist  4.9-6.7:	0.0-3.0:   Moist   3.0-6.7:   Wet 	0.0-2.5:   Moist  2.5-6.7:   Wet 	0.0-3.0:   Moist   3.0-6.7:   Wet 
1444:	 	 				I I	 						
Wurtsmith	A     	  0.0-5.4:   Moist  5.4-6.7:   Wet 	0.0-6.2:   Moist   6.2-6.7:   Wet	0.0-4.1:   Moist  4.1-6.7:   Wet	0.0-2.5:   Moist  2.5-6.7:   Wet 	0.0-2.8:   Moist  2.8-6.7:   Wet 	0.0:   Dry*  0.0-3.3:   Moist  3.3-6.7:	0.0-0.3:   Dry   0.3-6.7:   Moist 	0.0-0.5:   Dry  0.5-6.7:   Moist 	0.0-0.3:   Dry   0.3-4.9:   Moist   4.9-6.7:	0.0-4.6:   Moist  4.6-6.7:   Wet 	0.0-4.1:   Moist  4.1-6.7:   Wet	0.0-4.9:   Moist  4.9-6.7:   Wet 

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January 	February	March	April	May	June	July	August	September	October 	November	December
1444:		[ ]											
Meehan	B       	0.0-3.3:   Moist  3.3-6.7:   Wet 	0.0-4.1:   Moist   4.1-6.7:   Wet 	0.0-3.3:   Moist  3.3-6.7:   Wet 	0.0-1.5:   Moist   1.5-6.7:   Wet 	0.0-1.8:   Moist  1.8-6.7:   Wet 	0.0:   Dry*  0.0-2.5:   Moist  2.5-6.7:   Wet	0.0-0.2:   Dry   0.2-4.9:   Moist   4.9-6.7:   Wet	0.0-0.3:   Dry   0.3-6.7:   Moist 	0.0-0.2:   Dry   0.2-4.9:   Moist   4.9-6.7:   Wet	0.0-3.0:   Moist   3.0-6.7:   Wet 	0.0-2.5:   Moist  2.5-6.7:   Wet	0.0-3.0:   Moist   3.0-6.7:   Wet 
Clearriver	   B       	0.0-5.4:   Moist  5.4-6.7:   Wet 	0.0-6.2:   Moist   6.2-6.7:   Wet 	0.0-4.1:   Moist  4.1-6.7:   Wet 	0.0-3.0:   Moist   3.0-6.7:   Wet 	0.0-3.8:   Moist   3.8-6.7:   Wet 	0.0:   Dry*   0.0-4.4:   Moist   4.4-6.7:   Wet	0.0-0.2:   Dry   0.2-6.7:   Moist 	0.0-0.3:   Dry   0.3-6.7:   Moist 	0.0-0.2:   Dry   0.2-4.9:   Moist   4.9-6.7:   Wet	0.0-4.6:   Moist  4.6-6.7:   Wet 	0.0-4.1:   Moist   4.1-6.7:   Wet 	0.0-4.9:   Moist   4.9-6.7:   Wet 
Two Inlets	   A   	  0.0-6.7:   Moist 	0.0-6.7:   Moist 	0.0-6.7:   Moist 	0.0-6.7:   Moist 	0.0-6.7:   Moist 	0.0-0.2:   Dry  0.2-6.7:   Moist	0.0-0.3: Dry 0.3-6.7: Moist	0.0-0.7:   Dry  0.7-6.7:   Moist	0.0-0.5:   Dry  0.5-6.7:   Moist	0.0-6.7:   Moist 	0.0-6.7:   Moist 	0.0-6.7:   Moist 
Cormant	   A/D       	   0.0-2.5:   Moist   2.5-6.7:   Wet 	0.0-3.3:   Moist   3.3-6.7:   Wet 	0.0-2.1:   Moist   2.1-6.7:   Wet 	0.0-0.5:   Moist  0.5-6.7:   Wet 	0.0-1.3:   Moist  1.3-6.7:   Wet 	0.0-1.6:   Moist  1.6-6.7:   Wet 	0.0:   Dry*   0.0-3.3:   Moist   3.3-6.7:   Wet	0.0:   Dry*   0.0-4.9:   Moist   4.9-6.7:   Wet	0.0-3.0:   Moist   3.0-6.7:   Wet 	0.0-2.1:   Moist   2.1-6.7:   Wet 	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-2.1:   Moist  2.1-6.7:   Wet 
1448:		 											
Grano	     	0.0-2.1:   Moist  2.1-6.7:   Wet	0.0-2.5:   Moist  2.5-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-2.1:   Moist  2.1-6.7:   Wet	0.0-3.0:   Moist  3.0-6.7:   Wet	0.0-2.5:   Moist  2.5-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet
Percy	   B/D     	0.0-3.0:   Moist   3.0-6.7:   Wet	0.0-3.3:   Moist  3.3-6.7:   Wet	0.0-2.1:   Moist   2.1-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-3.0:   Moist  3.0-6.7:   Wet	0.0-3.8:   Moist  3.8-6.7:   Wet	0.0-3.3:   Moist  3.3-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-2.1:   Moist   2.1-6.7:   Wet
Augsburg	   B/D     	  0.0-2.1:   Moist  2.1-6.7:   Wet	0.0-2.6:   Moist  2.6-6.7:   Wet	0.0-2.3:   Moist   2.3-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-3.0:   Moist  3.0-6.7:   Wet	0.0-3.8:   Moist  3.8-6.7:   Wet	0.0-3.3:   Moist  3.3-6.7:   Wet	0.0-2.5:   Moist   2.5-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-2.0:   Moist   2.0-6.7:   Wet
Woodslake	   D     	  0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	  0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*   0.0-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-1.3:   Moist   1.3-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	  0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.8:   Moist   0.8-6.7:   Wet

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro-  logic  group	January   	February	March 	April	May	June	July	August	September	October 	November	December
1449:		[ [											
Grano	D     	0.0-2.1:   Moist  2.1-6.7:   Wet	0.0-2.5:   Moist  2.5-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-2.1:   Moist  2.1-6.7:   Wet	0.0-3.0:   Moist  3.0-6.7:   Wet	0.0-2.5:   Moist  2.5-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet
Percy	   B/D     	0.0-3.0:   Moist  3.0-6.7:   Wet	0.0-3.3:   Moist  3.3-6.7:   Wet	0.0-2.1:   Moist   2.1-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-3.0:   Moist  3.0-6.7:   Wet	0.0-3.8:   Moist  3.8-6.7:   Wet	0.0-3.3:   Moist  3.3-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-2.1:   Moist  2.1-6.7:   Wet
Augsburg	   B/D     	  0.0-2.1:   Moist  2.1-6.7:   Wet	0.0-2.6:   Moist  2.6-6.7:   Wet	0.0-2.3:   Moist   2.3-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-3.0:   Moist  3.0-6.7:   Wet	0.0-3.8:   Moist  3.8-6.7:   Wet	0.0-3.3:   Moist  3.3-6.7:   Wet	0.0-2.5:   Moist   2.5-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-2.0:   Moist  2.0-6.7:   Wet
Woodslake		0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-0.8:   Moist   0.8-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet
1807:	İ	İ	İ		İ	İ					İ		İ
Cathro, ponded	D 	0.0-6.7:   Wet	0.0-6.7:   Wet	0.0-6.7:   Wet	0.0-6.7:   Wet	0.0-6.7:   Wet	0.0-6.7:   Wet	0.0-6.7:   Wet	0.0-6.7:   Wet	0.0-6.7:   Wet	0.0-6.7:   Wet	0.0-6.7: Wet	0.0-6.7: Wet
Haug	   B/D     	  0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-2.5:   Moist  2.5-6.7:   Wet	0.0:   Moist*   0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-0.3:   Moist  0.3-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet
Seelyeville,	     D 	  0.0-6.7:   Wet	0.0-6.7: Wet	  0.0-6.7:   Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	  0.0-6.7:   Wet	  0.0-6.7:   Wet	  0.0-6.7:   Wet	0.0-6.7:
Percy	   B/D     	  0.0-3.0:   Moist  3.0-6.7:   Wet	0.0-3.3:   Moist  3.3-6.7:   Wet	  0.0-2.1:   Moist  2.1-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.8:   Moist   0.8-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	0.0-3.0:   Moist  3.0-6.7:   Wet	0.0-3.8:   Moist   3.8-6.7:   Wet	0.0-3.3:   Moist  3.3-6.7:   Wet	  0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	  0.0-2.1:   Moist  2.1-6.7:   Wet
1808:			i									i	
Markey, ponded	A/D	0.0-6.7: Wet	0.0-6.7:   Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet
Leafriver	   A/D     	  0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-2.5:   Moist  2.5-6.7:   Wet	  0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.8:   Moist   0.8-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet	  0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-0.3:   Moist  0.3-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet

Table 26.--Soil Moisture Status by Depth--Continued

	Hydro-  logic  group	January   	February 	March   	April 	May   	June 	July   	August 	September   	October   	November	Decembe
1808:		  -						-					
Seelyeville,		 		1	1		1						
ponded	   D	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:	0.0-6.7:
pondod		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Cormant	A/D	0.0-2.5:	0.0-3.3:	0.0-2.1:	0.0-0.5:	0.0-1.3:	0.0-1.6:	0.0:	0.0:	0.0-3.0:	0.0-2.1:	0.0-1.6:	0.0-2.1:
		Moist	Moist	Moist	Moist	Moist	Moist	Dry*	Dry*	Moist	Moist	Moist	Moist
		2.5-6.7:	3.3-6.7:	2.1-6.7:	0.5-6.7:	1.3-6.7:	1.6-6.7:	0.0-3.3:	0.0-4.9:	3.0-6.7:	2.1-6.7:	1.6-6.7:	2.1-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Moist	Moist	Wet	Wet	Wet	Wet
								3.3-6.7:	4.9-6.7:				
			ļ				1	Wet	Wet				
1918:	 	 		 									
Croke	В	0.0-5.4:	0.0-5.7:	0.0-4.6:	0.0-2.5:	0.0-2.5:	0.0-3.0:	0.0-4.6:	0.0:	0.0-4.1:	0.0-3.8:	0.0-3.3:	0.0-4.1:
	i	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Dry*	Moist	Moist	Moist	Moist
	İ	5.4-6.7:	5.7-6.7:	4.6-6.7:	2.5-6.7:	2.5-6.7:	3.0-6.7:	4.6-6.7:	0.0-6.7:	4.1-6.7:	3.8-6.7:	3.3-6.7:	4.1-6.7:
	İ	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Moist	Wet	Wet	Wet	Wet
	İ								6.7:				
		 							Wet*				
Augsburg	   B/D	0.0-2.1:	0.0-2.6:	0.0-2.3:	0.0-0.5:	0.0-0.8:	0.0-1.6:	0.0-3.0:	0.0-3.8:	0.0-3.3:	0.0-2.5:	0.0-1.6:	0.0-2.0:
		Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist
		2.1-6.7:	2.6-6.7:	2.3-6.7:	0.5-6.7:	0.8-6.7:	1.6-6.7:	3.0-6.7:	3.8-6.7:	3.3-6.7:	2.5-6.7:	1.6-6.7:	2.0-6.7:
	 	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Grano	   D	0.0-2.1:	0.0-2.5:	0.0-1.3:	0.0:	0.0-0.5:	0.0-1.3:	0.0-2.1:	0.0-3.0:	0.0-2.5:	0.0-1.6:	0.0-1.3:	0.0-1.6:
		Moist	Moist	Moist	Moist*	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist
		2.1-6.7:	2.5-6.7:	1.3-6.7:	0.0-6.7:	0.5-6.7:	1.3-6.7:	2.1-6.7:	3.0-6.7:	2.5-6.7:	1.6-6.7:	1.3-6.7:	1.6-6.7:
	 	Wet 	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
1923B:	İ					İ		İ			İ	İ	
Garnes, very													
stony	В	0.0-5.4:		0.0-4.9:	0.0-2.5:	0.0-2.8:	0.0:	0.0-0.2:	0.0-0.2:	0.0:	0.0-4.3:	0.0-3.3:	0.0-4.6:
		Moist	Moist	Moist	Moist	Moist	Dry*	Dry	Dry	Dry*	Moist	Moist	Moist
		5.4-6.7:	5.9-6.7:	4.9-6.7:	2.5-6.7:	2.8-6.7:	0.0-3.1:	0.2-5.7:	0.2-6.7:	0.0-4.9:	4.3-6.7:	3.3-6.7:	4.6-6.7:
	!	Wet	Wet	Wet	Wet	Wet	Moist	Moist	Moist	Moist	Wet	Wet	Wet
	!						3.1-6.7:	5.7-6.7:	6.7:	4.9-6.7:			
	 	 					Wet	Wet	Wet*	Wet			
Chilgren	C	0.0-3.0:	0.0-3.3:	0.0-2.1:	0.0-0.5:	0.0-0.8:	0.0-1.3:	0.0-3.0:	0.0-3.8:	0.0-3.3:	0.0-1.6:	0.0-1.3:	0.0-2.1:
		Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist	Moist
		3.0-6.7:	3.3-6.7:	2.1-6.7:	0.5-6.7:	0.8-6.7:	1.3-6.7:	3.0-6.7:	3.8-6.7:	3.3-6.7:	1.6-6.7:	1.3-6.7:	2.1-6.7:
		Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet

Table 26	Soil :	Moisture	Status	by	DepthContinued
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	Hydro-  logic  group	January	February	March	April	May	June	July	August	September	October	November	December
1923B:	 												
Eckvoll	B         	0.0-5.4:   Moist   5.4-6.7:   Wet 	0.0-5.7:   Moist  5.7-6.7:   Wet 	0.0-4.6:   Moist  4.6-6.7:   Wet 	0.0-2.5:   Moist   2.5-6.7:   Wet 	0.0-3.1:   Moist   3.1-6.7:   Wet 	0.0-0.1:   Dry   0.1-3.8:   Moist   3.8-6.7:   Wet	0.0-0.2:   Dry  0.2-4.9:   Moist  4.9-6.7:   Wet	0.0-0.3:   Dry   0.3-6.7:   Moist   6.7:   Wet*	0.0:   Dry*  0.0-4.1:   Moist  4.1-6.7:   Wet	0.0-3.8:   Moist   3.8-6.7:   Wet 	0.0-3.3:   Moist   3.3-6.7:   Wet 	0.0-4.1:   Moist   4.1-6.7:   Wet 
Pelan	B         	0.0-5.4:   Moist  5.4-6.7:   Wet 	0.0-5.7:   Moist  5.7-6.7:   Wet 	0.0-4.6:   Moist   4.6-6.7:   Wet 	0.0-2.5:   Moist  2.5-6.7:   Wet 	0.0-3.0:   Moist  3.0-6.7:   Wet 	0.0:   Dry*  0.0-3.6:   Moist  3.6-6.7:   Wet	0.0-0.2:   Dry   0.2-5.4:   Moist   5.4-6.7:   Wet	0.0-0.3:   Dry  0.3-6.7:   Moist  6.7:   Wet*	0.0:   Dry*   0.0-4.6:   Moist   4.6-6.7:   Wet	0.0-3.9:   Moist   3.9-6.7:   Wet 	0.0-3.3:   Moist  3.3-6.7:   Wet 	0.0-4.6:   Moist  4.6-6.7:   Wet 
1984:	İ				i		i		i	İ	i	i	
Leafriver	A/D       	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-2.5:   Moist  2.5-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.3:   Moist   1.3-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-0.3:   Moist   0.3-6.7:   Wet	0.0-1.3:   Moist  1.3-6.7:   Wet
Cormant	A/D         	0.0-2.5:   Moist   2.5-6.7:   Wet 	0.0-3.3:   Moist  3.3-6.7:   Wet 	0.0-2.1:   Moist  2.1-6.7:   Wet 	0.0-0.5:   Moist  0.5-6.7:   Wet 	0.0-1.3:   Moist  1.3-6.7:   Wet 	0.0-1.6:   Moist  1.6-6.7:   Wet 	0.0:   Dry*  0.0-3.3:   Moist  3.3-6.7:   Wet	0.0:   Dry*  0.0-4.9:   Moist  4.9-6.7:   Wet	0.0-3.0:   Moist  3.0-6.7:   Wet 	0.0-2.1:   Moist   2.1-6.7:   Wet 	0.0-1.6:   Moist  1.6-6.7:   Wet 	0.0-2.1:   Moist  2.1-6.7:   Wet 
Markey	   A/D     	0.0-1.3:   Moist   1.3-6.7:   Wet	0.0-2.1:   Moist  2.1-6.7:   Wet	0.0:   Moist*   0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0:   Moist*  0.0-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet	0.0-1.6:   Moist  1.6-6.7:   Wet	0.0-1.1:   Moist  1.1-6.7:   Wet	0.0-0.5:   Moist  0.5-6.7:   Wet	0.0-0.3:   Moist  0.3-6.7:   Wet	0.0-0.8:   Moist  0.8-6.7:   Wet
Redby	   B       	0.0-3.3:   Moist  3.3-6.7:   Wet 	Moist	0.0-3.3:   Moist   3.3-6.7:   Wet 	0.0-1.5:   Moist   1.5-6.7:   Wet 	0.0-1.8:   Moist  1.8-6.7:   Wet 	0.0:   Dry*  0.0-2.5:   Moist  2.5-6.7:   Wet	0.0-0.2:   Dry   0.2-4.9:   Moist   4.9-6.7:   Wet	0.0-0.3:   Dry   0.3-6.7:   Moist 	0.0-0.2:   Dry   0.2-4.9:   Moist   4.9-6.7:   Wet	0.0-3.0:   Moist   3.0-6.7:   Wet 	0.0-2.5:   Moist   2.5-6.7:   Wet 	0.0-3.0:   Moist  3.0-6.7:   Wet 
W: Water.		   		   									

<sup>\*</sup> The given moisture status is transitory at about the indicated depth.

Map symbol and component name	   January   	   February 	March	April	May	June 	   July 	August	  September 	October	   November 	Decembe:
47:												
Colvin	None	None	None	None	None	None	None	None	None	None	None	None
Bearden		None	None	None	None	None	None	None	None	None	None	None
Grano	1	None	None	None	None	None	None	None	None	None	None	None
Sax		None	None	None	None	None	None	None	None	None	None	None
48B:	 											
Hiwood	None	None	None	None	None	None	None	None	None	None	None	None
Redby	None	None	None	None	None	None	None	None	None	None	None	None
Clearriver		None	None	None	None	None	None	None	None	None	None	None
Cormant	None	None	None	None	None	None	None	None	None	None	None	None
Zimmerman	1	None	None	None	None	None	None	None	None	None	None	None
52:	 											
Augsburg	None	None	None	None	None	None	None	None	None	None	None	None
Croke	None	None	None	None	None	None	None	None	None	None	None	None
Grano	None	None	None	None	None	None	None	None	None	None	None	None
Sago	None	None	None	None	None	None	None	None	None	None	None	None
59:	 											
Grimstad	None	None	None	None	None	None	None	None	None	None	None	None
Strathcona	None	None	None	None	None	None	None	None	None	None	None	None
Foxhome	None	None	None	None	None	None	None	None	None	None	None	None
64:												
Ulen	None	None	None	None	None	None	None	None	None	None	None	None
Rosewood	None	None	None	None	None	None	None	None	None	None	None	None
Redby	None	None	None	None	None	None	None	None	None	None	None	None
Rushlake	None	None	None	None	None	None	None	None	None	None	None	None
65:												
Foxhome	None	None	None	None	None	None	None	None	None	None	None	None
Strandquist	None	None	None	None	None	None	None	None	None	None	None	None
Skagen	None	None	None	None	None	None	None	None	None	None	None	None
67:	 											
Bearden	None	None	None	None	None	None	None	None	None	None	None	None
Colvin	None	None	None	None	None	None	None	None	None	None	None	None
77:												
Garnes	None	None	None	None	None	None	None	None	None	None	None	None
Chilgren	None	None	None	None	None	None	None	None	None	None	None	None
Eckvoll	None	None	None	None	None	None	None	None	None	None	None	None
D - 1	1 a.r.	1 3 7	1 3 7	I		1 3 7	1 av	1 37	1.57	1	137	1 37

Pelan----- None

None

None

None

None

None

None

None

None

None

None

None

Table 27.--Flooding Frequency and Duration

Table 27.--Flooding Frequency and Duration--Continued

Map symbol	January	February	March	April	May	June	July	August	September	October	November	Decemb
and	<u> </u>				ļ		!	ļ	!			
component name	<u> </u>	1					1		1			1
111:	 				l							
Hangaard	  None	None	None	None	None	None	None	None	None	None	None	None
Deerwood		None	None	None	None	None	None	None	None	None	None	None
Rushlake	1	None	None	None	None	None	None	None	None	None	None	None
Rosewood	1	None	None	None	None	None	None	None	None	None	None	None
	İ	i	İ	j	į	į	i	į	i	İ	i	j
116:	ļ	1		[		Ţ	1	Ţ	]		1	
Redby		None	None	None	None	None	None	None	None	None	None	None
Cormant	1	None	None	None	None	None	None	None	None	None	None	None
Hiwood	1	None	None	None	None	None	None	None	None	None	None	None
Leafriver	None	None	None	None	None	None	None	None	None	None	None	None
117:	 											
Cormant	None	None	None	None	None	None	None	None	None	None	None	None
Leafriver	1	None	None	None	None	None	None	None	None	None	None	None
Epoufette	1	None	None	None	None	None	None	None	None	None	None	None
Redby		None	None	None	None	None	None	None	None	None	None	None
Grygla,	İ								1			
depressional	None	None	None	None	None	None	None	None	None	None	None	None
	İ								i			i .
133:	İ	İ	İ	İ	İ	i	i	į	İ	İ	İ	İ
Dalbo	None	None	None	None	None	None	None	None	None	None	None	None
Mustinka	None	None	None	None	None	None	None	None	None	None	None	None
Moranville	None	None	None	None	None	None	None	None	None	None	None	None
							1					
145:												
Enstrom	None	None	None	None	None	None	None	None	None	None	None	None
Grygla	None	None	None	None	None	None	None	None	None	None	None	None
Redby	1	None	None	None	None	None	None	None	None	None	None	None
Pelan	None	None	None	None	None	None	None	None	None	None	None	None
147:	l I											
Spooner	None	None	None	None	None	None	None	None	None	None	None	None
Baudette	1	None	None	None	None	None	None	None	None	None	None	None
Grygla	1	None	None	None	None	None	None	None	None	None	None	None
Sago	1	None	None	None	None	None	None	None	None	None	None	None
	İ		İ			i		İ	İ	İ		
158B:	İ	İ	İ	İ	j	j	i	j	İ	İ	į	İ
Zimmerman	None	None	None	None	None	None	None	None	None	None	None	None
Hiwood	None	None	None	None	None	None	None	None	None	None	None	None
Two Inlets	None	None	None	None	None	None	None	None	None	None	None	None
Redby	None	None	None	None	None	None	None	None	None	None	None	None
1.650											1	
167B:												
Baudette		None	None	None	None	None	None	None	None	None	None	None
Spooner	1	None	None	None	None	None	None	None	None	None	None	None
Moranville	None	None	None	None	None	None	None	None	None	None	None	None

Map symbol	January	February	March	April	May	June	July	August	September	October	November	December
and						ļ			1			
component name	1	1	1						1	1	1	<u> </u>
187:	 		 					1				
Haug	None	None	None	None	None	None	None	None	None	None	None	None
Percy	1	None	None	None	None	None	None	None	None	None	None	None
Cathro		None	None	None	None	None	None	None	None	None	None	None
Boash	1	None	None	None	None	None	None	None	None	None	None	None
191:												
Epoufette	None	None	None	None	None	None	None	None	None	None	None	None
Cormant		None	None	None	None	None	None	None	None	None	None	None
Leafriver		None	None	None	None	None	None	None	None	None	None	None
Meehan		None	None	None	None	None	None	None	None	None	None	None
meenan	None	None	None	None	None	None	None	None	None	None	None	None
202:	İ	İ	İ	j	į	į	j	İ	İ	İ	İ	İ
Meehan		None	None	None	None	None	None	None	None	None	None	None
Cormant		None	None	None	None	None	None	None	None	None	None	None
Wurtsmith	None	None	None	None	None	None	None	None	None	None	None	None
Leafriver	None	None	None	None	None	None	None	None	None	None	None	None
205:						l I						
Karlstad	None	None	None	None	None	None	None	None	None	None	None	None
Sahkahtay	None	None	None	None	None	None	None	None	None	None	None	None
Marquette	None	None	None	None	None	None	None	None	None	None	None	None
Redby	None	None	None	None	None	None	None	None	None	None	None	None
Pits, gravel.	į		į	į	į	į	į	j	į	į	į	į
242B:	 		 			 		 				 
Marquette	None	None	None	None	None	None	None	None	None	None	None	None
Karlstad		None	None	None	None	None	None	None	None	None	None	None
Pits, gravel.												
280:												
Pelan	None	None	None	None	None	None	None	None	None	None	None	None
Strandquist		None	None	None	None	None	None	None	None	None	None	None
Garnes		None	None	None	None	None	None	None	None	None	None	None
Marquette		None	None	None	None	None	None	None	None	None	None	None
Pits, gravel.						Hone						
270.								1				
379:		1	I I		I	i i			1	1		
Percy, very	None	Mone	None	None	None	  Mon-	None	None	Mone	Mone	None	None
cobbly		None	None	None	None	None	None	None	None	None	None	None
Boash		None	None	None	None	None	None		None	None	None	None
Strandquist		None	None	None	None	None	None	None	None	None	None	None
Haug	None	None	None	None	None	None	None	None	None	None	None	None
Skagen, very	   Warra		   Name	l Warra			l Warra	l Nome			l Name	
cobbly	None	None	None	None	None	None	None	None	None	None	None	None

Table 27.--Flooding Frequency and Duration--Continued

Table 27.--Flooding Frequency and Duration--Continued

Map symbol	January	February	March	April	May	June	July	August	September	October	November	Decembe
and												
component name		1	1							1	1	<u> </u>
383:								1	1			
Percy	None	None	None	None	None	None	None	None	None	None	None	None
Boash		None	None	None	None	None	None	None	None	None	None	None
Strandquist		None	None	None	None	None	None	None	None	None	None	None
Haug		None	None	None	None	None	None	None	None	None	None	None
Skagen		None	None	None	None	None	None	None	None	None	None	None
204												
384:												
Percy,		137	137	137						137		
depressional		None	None	None	None	None	None	None	None	None	None	None
Haug		None	None	None	None	None	None	None	None	None	None	None
Percy	1	None	None	None	None	None	None	None	None	None	None	None
Boash	None	None	None	None	None	None	None	None	None	None	None	None
387:	İ	i	<u> </u>	i	i	i		i			i	i
Roliss,	İ	i	i	i	į	į	j	i	j	İ	İ	i
depressional	None	None	None	None	None	None	None	None	None	None	None	None
Haug		None	None	None	None	None	None	None	None	None	None	None
Roliss	None	None	None	None	None	None	None	None	None	None	None	None
404												
404:										127		1.37
Chilgren	1	None	None	None	None	None	None	None	None	None	None	None
Garnes	1	None	None	None	None	None	None	None	None	None	None	None
Grygla	1	None	None	None	None	None	None	None	None	None	None	None
Haug	None	None	None	None	None	None	None	None	None	None	None	None
412:		i	İ		İ	İ	i	İ	i			İ
Mavie	None	None	None	None	None	None	None	None	None	None	None	None
Foxhome	None	None	None	None	None	None	None	None	None	None	None	None
Northwood	None	None	None	None	None	None	None	None	None	None	None	None
Percy, very												
cobbly	None	None	None	None	None	None	None	None	None	None	None	None
432:									-			1
Strandquist	None	None	None	None	None	None	None	None	None	None	None	None
Percy, very	İ	i	i	i	i	i	j	i	i	i	i	i
cobbly	None	None	None	None	None	None	None	None	None	None	None	None
Haug		None	None	None	None	None	None	None	None	None	None	None
Boash		None	None	None	None	None	None	None	None	None	None	None
Foxhome	1	None	None	None	None	None	None	None	None	None	None	None
422.												
433:	1	I	I	I I	I	I I	I I	I I	I		I	
Syrene,	None	None	None	None	Non-	   Non -	None	None	None	None	Mone	   Non -
depressional		None	None	None	None	None	None	None	None	None	None	None
Deerwood		None	None	None	None	None	None	None	None	None	None	None
Rosewood	1	None	None	None	None	None	None	None	None	None	None	None
Syrene	None	None	None	None	None	None	None	None	None	None	None	None

Map symbol	January	February	March	April	May	June	July	August	September	October	November	Decembe:
and												
component name		1									<u> </u>	
40.5												
435:			1									
Syrene		None	None	None	None	None	None	None	None	None	None	None
Rosewood	None	None	None	None	None	None	None	None	None	None	None	None
Syrene,		137	1.77						137	137		
depressional		None	None	None	None	None	None	None	None	None	None	None
Karlsruhe		None	None None	None	None	None  None	None	None	None	None	None	None None
Deerwood	None	None	None	None	None	None	None	None	None	None	None	None
439:		i		i			i					
Strathcona	None	None	None	None	None	None	None	None	None	None	None	None
Northwood	None	None	None	None	None	None	None	None	None	None	None	None
Percy	None	None	None	None	None	None	None	None	None	None	None	None
Grimstad	None	None	None	None	None	None	None	None	None	None	None	None
Strandquist	None	None	None	None	None	None	None	None	None	None	None	None
481:												
Kratka	None	None	None	None	None	None	None	None	None	None	None	None
Northwood		None	None	None	None	None	None	None	None	None	None	None
Percy		None	None	None	None	None	None	None	None	None	None	None
Enstrom		None	None	None	None	None	None	None	None	None	None	None
Strandguist		None	None	None	None	None	None	None	None	None	None	None
482:		i	İ	İ	į	i	i	į	i	İ	İ	İ
Grygla	None	None	None	None	None	None	None	None	None	None	None	None
Chilgren	None	None	None	None	None	None	None	None	None	None	None	None
Grygla,		İ	Ì	j	İ	ĺ	İ	İ		İ	İ	
depressional	None	None	None	None	None	None	None	None	None	None	None	None
Enstrom	None	None	None	None	None	None	None	None	None	None	None	None
Northwood	None	None	None	None	None	None	None	None	None	None	None	None
532:							ļ					
Sago	None	None	None	None	None	None	None	None	None	None	None	None
Cathro		None	None	None	None	None	None	None	None	None	None	None
Zippel		None	None	None	None	None	None	None	None	None	None	None
534:		j	İ	j	į	i	į	į	İ	İ	İ	İ
Mooselake		None	None	None	None	None	None	None	None	None	None	None
Bullwinkle	None	None	None	None	None	None	None	None	None	None	None	None
Dora	None	None	None	None	None	None	None	None	None	None	None	None
Tawas	None	None	None	None	None	None	None	None	None	None	None	None
540:												 
Seelyeville	None	None	None	None	None	None	None	None	None	None	None	None
Cathro		None	None	None	None	None	None	None	None	None	None	None
Dora		None	None	None	None	None	None	None	None	None	None	None
Markey	None	None	None	None	None	None	None	None	None	None	None	None

Table 27.--Flooding Frequency and Duration--Continued

Table 27.--Flooding Frequency and Duration--Continued

Map symbol	January	February	March	April	May	June	July	August	September	October	November	December
and												
component name	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
F.4.1				-							1	
541: Rifle		  None	None	None		  Ware a	Non-	None	  None	   No. 10	None	None
Tacoosh		None		None	None	None None	None			None	None	
Tacoosii	None	None	None	None	None	None	None	None	None	None	None	None
543:	 			-	l I					I I		
Markey	None	None	None	None	None	None	None	None	None	None	None	None
Cormant		None	None	None	None	None	None	None	None	None	None	None
Seelyeville		None	None	None	None	None	None	None	None	None	None	None
•	i	i	i	i	i	i	i	i	İ	İ	i	i
544:	į	İ	İ	İ	i	i	İ	İ	i	İ	İ	İ
Cathro	None	None	None	None	None	None	None	None	None	None	None	None
Percy, very												
cobbly	None	None	None	None	None	None	None	None	None	None	None	None
Grygla	None	None	None	None	None	None	None	None	None	None	None	None
Seelyeville	None	None	None	None	None	None	None	None	None	None	None	None
	[			Ţ								
546:								ļ				
Lupton		None	None	None	None	None	None	None	None	None	None	None
Bullwinkle		None	None	None	None	None	None	None	None	None	None	None
Dora		None	None	None	None	None	None	None	None	None	None	None
Tawas	None	None	None	None	None	None	None	None	None	None	None	None
F.4.F.				-							1	1
547: Deerwood	None	None	None	None	None	None	None	None	None	None	None	None
Markey		None	None	None	None	None	None	None	None	None	None	None
Rosewood		None	None	None	None	None	None	None	None	None	None	None
Syrene		None	None	None	None	None	None	None	None	None	None	None
byrene												
550:	i	i	i	i	i	i	i	i	1		i	i
Dora	None	None	None	None	None	None	None	None	None	None	None	None
Boash	None	None	None	None	None	None	None	None	None	None	None	None
Seelyeville	None	None	None	None	None	None	None	None	None	None	None	None
Woodslake	None	None	None	None	None	None	None	None	None	None	None	None
	ĺ	İ	İ	İ	İ	İ		İ	İ		İ	ĺ
561:												
Bullwinkle	None	None	None	None	None	None	None	None	None	None	None	None
Lupton	None	None	None	None	None	None	None	None	None	None	None	None
Northwood,								1				
wooded		None	None	None	None	None	None	None	None	None	None	None
Chilgren	None	None	None	None	None	None	None	None	None	None	None	None
	ļ.	1	!	Ţ		Ţ	1	ļ	!		1	
563:	ļ.	1	!	Ţ		Ţ	1	ļ	!		1	
Northwood		None	None	None	None	None	None	None	None	None	None	None
Grygla		None	None	None	None	None	None	None	None	None	None	None
Berner		None	None	None	None	None	None	None	None	None	None	None
Strandquist	None	None	None	None	None	None	None	None	None	None	None	None

Map symbol and	January 	February	March	April	May	June	July	August	September	October	November	Decembe
component name	İ	i	i	i	j	i	i	i	i	i	i	i
<del></del>	i I	i	i	i	i	i	i	i	i	i	i	i
565:	İ	i	İ	i	İ	i	į	i	i	i	i	i
Eckvoll	None	None	None	None	None	None	None	None	None	None	None	None
Chilgren	None	None	None	None	None	None	None	None	None	None	None	None
Grygla	None	None	None	None	None	None	None	None	None	None	None	None
Hiwood	None	None	None	None	None	None	None	None	None	None	None	None
568:	 											1
Zippel	None	None	None	None	None	None	None	None	None	None	None	None
Augsburg,												
depressional	None	None	None	None	None	None	None	None	None	None	None	None
Sago		None	None	None	None	None	None	None	None	None	None	None
Skime	1	None	None	None	None	None	None	None	None	None	None	None
51121110												
569:	i	i	ì	i	i	i	i	i	i	i	i	i
Wabanica	None	None	None	None	None	None	None	None	None	None	None	None
Warroad	1	None	None	None	None	None	None	None	None	None	None	None
Sax	None	None	None	None	None	None	None	None	None	None	None	None
Grano	1	None	None	None	None	None	None	None	None	None	None	None
Enstrom	1	None	None	None	None	None	None	None	None	None	None	None
	İ		i			i						
570:	i	i	i	i	i	i	i	i	i	i	i	i
Faunce	None	None	None	None	None	None	None	None	None	None	None	None
Clearriver	None	None	None	None	None	None	None	None	None	None	None	None
Zimmerman	None	None	None	None	None	None	None	None	None	None	None	None
Meehan	None	None	None	None	None	None	None	None	None	None	None	None
Pits, gravel.	į	į	į	į	į	į	į	į	į	į	į	į
581:	 											
Percy	None	None	None	None	None	None	None	None	None	None	None	None
Haug		None	None	None	None	None	None	None	None	None	None	None
Boash	None	None	None	None	None	None	None	None	None	None	None	None
Skagen	None	None	None	None	None	None	None	None	None	None	None	None
582:	 					İ	l I					
Roliss	None	None	None	None	None	None	None	None	None	None	None	None
Roliss,												
depressional	None	None	None	None	None	None	None	None	None	None	None	None
Boash		None	None	None	None	None	None	None	None	None	None	None
Haug	1	None	None	None	None	None	None	None	None	None	None	None
• 3					-	-	-					
583:												
Nereson	None	None	None	None	None	None	None	None	None	None	None	None
Percy	None	None	None	None	None	None	None	None	None	None	None	None
Pelan	None	None	None	None	None	None	None	None	None	None	None	None
Foxhome	None	None	None	None	None	None	None	None	None	None	None	None

Table 27.--Flooding Frequency and Duration--Continued

Table 27.--Flooding Frequency and Duration--Continued

Map symbol	January	February	March	April	May	June	July	August	September	October	November	December
and	!	!		ļ	!			ļ				!
component name	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
627.												
627:			  Ware	   Warra		   Warra			Non-	   No. 10	Non-	
Tawas		None	None	None	None	None	None	None	None	None	None	None
Leafriver		None None	None  None	None None	None None	None None	None   None	None None	None   None	None  None	None None	None
Lupton Cormant		None	None	None	None	None	None	None	None	None	None	None None
COTMATIC	None	None	None	None	None	None	None	None	None	None	None	None
630:	i		i	i		i		i				
Wildwood	None	None	None	None	None	None	None	None	None	None	None	None
Boash	None	None	None	None	None	None	None	None	None	None	None	None
Dora	None	None	None	None	None	None	None	None	None	None	None	None
Espelie	None	None	None	None	None	None	None	None	None	None	None	None
-	i	İ	İ	i	į	i	İ	İ	İ	İ	İ	i
643:				1		1						
Huot	None	None	None	None	None	None	None	None	None	None	None	None
Thiefriver	None	None	None	None	None	None	None	None	None	None	None	None
Redby	None	None	None	None	None	None	None	None	None	None	None	None
644:				1								1
Boash		None	None	None	None	None	None	None	None	None	None	None
Percy		None	None	None	None	None	None	None	None	None	None	None
Woodslake		None	None	None	None	None	None	None	None	None	None	None
Strandquist	None	None	None	None	None	None	None	None	None	None	None	None
645:	 			İ								
Espelie	None	None	None	None	None	None	None	None	None	None	None	None
Grano	None	None	None	None	None	None	None	None	None	None	None	None
Hilaire	None	None	None	None	None	None	None	None	None	None	None	None
Wildwood	None	None	None	None	None	None	None	None	None	None	None	None
	ĺ	İ	İ	İ	j	İ	j	İ	İ	İ	İ	İ
651:												
Thiefriver	None	None	None	None	None	None	None	None	None	None	None	None
Grano		None	None	None	None	None	None	None	None	None	None	None
Huot		None	None	None	None	None	None	None	None	None	None	None
Wildwood	None	None	None	None	None	None	None	None	None	None	None	None
708:				-								1
Rushlake	None	None	None	None	None	None	None	None	None	None	None	None
Corliss		None	None	None	None	None	None	None	None	None	None	None
Redby		None	None	None	None	None	None	None	None	None	None	None
Hangaard		None	None	None	None	None	None	None	None	None	None	None
Pits, gravel.	HOME	140116	140116	HOHE	HOHE	140116	HOME	140116			140116	140116
cs, graver.	i			i		i						
712:		i		i	İ	i	i	i	i		İ	İ
Rosewood	None	None	None	None	None	None	None	None	None	None	None	None
Deerwood		None	None	None	None	None	None	None	None	None	None	None
Hangaard		None	None	None	None	None	None	None	None	None	None	None
Ulen	1	None	None	None	None	None	None	None	None	None	None	None
-	1		1	1		1 2	1	1	1	1	1	1

Map symbol and	   January 	February	March	   April	   May	June	July	August	September	October	November	Decembe
component name	İ	i		İ	! 	İ	ì	i	i		i	
	İ	i	1	1	l	1	İ	i	i	1	i	İ
721B:	i	i	i	İ	! 	İ	i	i	i	İ	i	i
Corliss	None	None	None	None	None	None	None	None	None	None	None	None
Rushlake	None	None	None	None	None	None	None	None	None	None	None	None
Hangaard	None	None	None	None	None	None	None	None	None	None	None	None
Pits, gravel.	į	į	į	İ		į	į	Ì	į	į	į	į
733:				 	 							
Berner	None	None	None	None	None	None	None	None	None	None	None	None
Grygla	None	None	None	None	None	None	None	None	None	None	None	None
Seelyeville	None	None	None	None	None	None	None	None	None	None	None	None
737:												
Mahkonce	None	None	None	None	None	None	None	None	None	None	None	None
Auganaush	None	None	None	None	None	None	None	None	None	None	None	None
Eckvoll	None	None	None	None	None	None	None	None	None	None	None	None
755:	 			 						 		
Woodslake	None	None	None	None	None	None	None	None	None	None	None	None
Boash	None	None	None	None	None	None	None	None	None	None	None	None
Wildwood	None	None	None	None	None	None	None	None	None	None	None	None
Dora	None	None	None	None	None	None	None	None	None	None	None	None
767:	 			 						 		
Auganaush	None	None	None	None	None	None	None	None	None	None	None	None
Mustinka	None	None	None	None	None	None	None	None	None	None	None	None
Wildwood	None	None	None	None	None	None	None	None	None	None	None	None
Mahkonce	None	None	None	None	None	None	None	None	None	None	None	None
794:	 		 									
Clearriver	None	None	None	None	None	None	None	None	None	None	None	None
Hiwood	None	None	None	None	None	None	None	None	None	None	None	None
Meehan	None	None	None	None	None	None	None	None	None	None	None	None
Faunce	None	None	None	None	None	None	None	None	None	None	None	None
1002:	 											
Fluvaquents,	İ	İ	İ	İ	İ	İ	İ	İ	İ	İ	İ	İ
frequently	į	İ	İ	İ	İ	İ	İ	i	i	İ	İ	i
flooded	None	None	Frequent	Very	Very	Frequent	Frequent	Frequent	Frequent	Frequent	Rare	None
	į		Very long	frequent	frequent	Long	Brief	Brief	Long	Long	Long	į
				Very long								
Seelyeville		None		None	None	None	None	None	None	None	None	None
Hapludalfs	None	None	None	None	None	None	None	None	None	None	None	None
Water.												1

Table 27.--Flooding Frequency and Duration--Continued

Table 27.--Flooding Frequency and Duration--Continued

Map symbol and	January 	February	March	April	May	June	July	August	September	October	November	Decembe
component name		i	i	! 	! 	i	i	i	i	i	i	
	<u> </u>	1	i i	1	<u> </u>	İ	Ī	1	1	Ī	i	i
1030:		i	İ			i	i	i	İ	i	i	
Pits, gravel.		i	İ	İ	İ	į	i	İ	İ	į	İ	i
Udipsamments	None	None	None	None	None	None	None	None	None	None	None	None
Corliss	None	None	None	None	None	None	None	None	None	None	None	None
Karlstad	None	None	None	None	None	None	None	None	None	None	None	None
Hangaard	None	None	None	None	None	None	None	None	None	None	None	None
1031:					 	 						
Seelyeville,		İ	İ	İ	İ	İ	İ	İ	İ	İ	İ	İ
ponded	None	None	None	None	None	None	None	None	None	None	None	None
Cathro	None	None	None	None	None	None	None	None	None	None	None	None
Dora	None	None	None	None	None	None	None	None	None	None	None	None
Markey	None	None	None	None	None	None	None	None	None	None	None	None
1067:				 	 				1			
Fluvaquents,												
frequently												
flooded	None	None	Frequent	Very	Very	Frequent	Frequent	Frequent	Frequent	Frequent	Rare	None
			Very long	frequent	frequent	Long	Brief	Brief	Long	Long	Long	
				Very long	Long							
Hapludalfs		None	None	None	None	None	None	None	None	None	None	None
Seelyeville	None	None	None	None	None	None	None	None	None	None	None	None
Water.				 	 							
1133B:				 	 							
Skime		None	None	None	None	None	None	None	None	None	None	None
Hiwood		None	None	None	None	None	None	None	None	None	None	None
Zippel	None	None	None	None	None	None	None	None	None	None	None	None
1134:				 	 							
Borup		None	None	None	None	None	None	None	None	None	None	None
Glyndon	None	None	None	None	None	None	None	None	None	None	None	None
Augsburg,												
depressional		None	None	None	None	None	None	None	None	None	None	None
Skime	None	None	None	None	None	None	None	None	None	None	None	None
1144:				 	 							
Strathcona,												
depressional	None	None	None	None	None	None	None	None	None	None	None	None
Kratka,												
depressional		None	1	None	None	None	None	None	None	None	None	None
Kratka		None	None	None	None	None	None	None	None	None	None	None
Northwood	None	None	None	None	None	None	None	None	None	None	None	None

Map symbol	January	February	March	April	May	June	July	August	September	October	November	December
and		1		ļ	1	1	ļ	1	1		1	
component name	<u> </u>	1	<u> </u>	1		1	1		1	<u> </u>	1	<u> </u>
					ļ	ļ	ļ		!		ļ	ļ
1154:					ļ	ļ	!				ļ	
Sax		None	None	None	None	None	None	None	None	None	None	None
Wabanica		None	None	None	None	None	None	None	None	None	None	None
Cathro		None	None	None	None	None	None	None	None	None	None	None
Woodslake	None	None	None	None	None	None	None	None	None	None	None	None
1158:	 		1							 		
Skagen	  None	None	None	None	None	None	None	None	None	None	None	None
Percy	'	None	None	None	None	None	None	None	None	None	None	None
Foxhome	!	None	None	None	None	None	None	None	None	None	None	None
2 0111101110												
1170:	İ	i	i	i	i	i	i	i	i	i	i	i
Skagen, very		İ	i	i	i	i	i	i	i	i	i	i
cobbly	None	None	None	None	None	None	None	None	None	None	None	None
Percy, very	İ	i	İ	i	į	İ	i	i	i	İ	į	i
cobbly	None	None	None	None	None	None	None	None	None	None	None	None
Foxhome	None	None	None	None	None	None	None	None	None	None	None	None
1179B:												
Moranville	None	None	None	None	None	None	None	None	None	None	None	None
Baudette		None	None	None	None	None	None	None	None	None	None	None
Hiwood	!	None	None	None	None	None	None	None	None	None	None	None
Spooner	None	None	None	None	None	None	None	None	None	None	None	None
1101							!		-			
1181:		Non-	   NT = = =					Name -				   Warra
Rosewood Ulen		None	None	None	None	None	None	None	None	None	None None	None
Redby		None  None	None None	None	None None	None None	None	None  None	None	None None	None	None None
Deerwood		None	None	None	None	None	None	None	None	None	None	None
Syrene		None	None	None	None	None	None	None	None	None	None	None
byrene	140116	None		None	None	I	None	None	None		None	None
1182:	 		İ			i	i	i	İ		İ	İ
Warroad	None	None	None	None	None	None	None	None	None	None	None	None
Wabanica	None	None	None	None	None	None	None	None	None	None	None	None
Enstrom		None	None	None	None	None	None	None	None	None	None	None
Sax		None	None	None	None	None	None	None	None	None	None	None
	İ	i	İ	i	į	İ	i	į	İ	İ	i	i
1187:		İ	İ	İ	İ	İ	İ	İ	İ	İ	İ	İ
Dora, ponded	None	None	None	None	None	None	None	None	None	None	None	None
Seelyeville,												
ponded	None	None	None	None	None	None	None	None	None	None	None	None
Wildwood	None	None	None	None	None	None	None	None	None	None	None	None
Boash	None	None	None	None	None	None	None	None	None	None	None	None

Table 27.--Flooding Frequency and Duration--Continued

Table 27.--Flooding Frequency and Duration--Continued

Map symbol	January	February	March	April	May	June	July	August	September	October	November	Decembe
and				ļ		ļ					ļ	
component name		<u> </u>	<u> </u>	<u> </u>			<u> </u>		1	<u> </u>	1	<u> </u>
1101				1								
1191:		137	137			137	137		137	1.37	137	
Sahkahtay		None	None	None	None	None	None	None	None	None	None	None
Cormant		None	None	None	None	None	None	None	None	None	None	None
		None	None	None	None	None	None	None	None	None	None	None
Karlstad		None	None	None	None	None	None	None	None	None	None	None
Redby	None	None	None	None	None	None	None	None	None	None	None	None
1206:		I I	I I	I I	l I	I I	l I			l I		l I
Cormant	None	None	None	None	None	None	None	None	None	None	None	None
Redby		None	None	None	None	None	None	None	None	None	None	None
Hiwood		None	None	None	None	None	None	None	None	None	None	None
Leafriver		None	None	None	None	None	None	None	None	None	None	None
neartivet	   MOIIE	INOTIE	INOTTE	None	None	INOTIE	NOITE	INOTTE	INOTTE	INOTIE	None	INOTIE
1214:				1								
Mustinka	None	None	None	None	None	None	None	None	None	None	None	None
Espelie		None	None	None	None	None	None	None	None	None	None	None
Wildwood		None	None	None	None	None	None	None	None	None	None	None
Dalbo		None	None	None	None	None	None	None	None	None	None	None
1274B:		i	i	i	i	i	i	i	i	i	i	
Redby	None	None	None	None	None	None	None	None	None	None	None	None
Hiwood		None	None	None	None	None	None	None	None	None	None	None
Leafriver,												1
wooded	None	None	None	None	None	None	None	None	None	None	None	None
Clearriver	None	None	None	None	None	None	None	None	None	None	None	None
Cormant		None	None	None	None	None	None	None	None	None	None	None
Zimmerman		None	None	None	None	None	None	None	None	None	None	None
1298:		İ	İ	i	i	i	i	İ	i	İ	i	İ
Borup	None	None	None	None	None	None	None	None	None	None	None	None
Augsburg,		İ	İ	i	i	i	i	i	i	i	i	i
depressional	None	None	None	None	None	None	None	None	None	None	None	None
Glyndon	None	None	None	None	None	None	None	None	None	None	None	None
Sago	None	None	None	None	None	None	None	None	None	None	None	None
Skime		None	None	None	None	None	None	None	None	None	None	None
		İ	i	i	i	i	i	i	i	İ	i	İ
1302:		İ	İ	į	į	İ	İ	İ	İ	İ	İ	
Foldahl	None	None	None	None	None	None	None	None	None	None	None	None
Kratka	None	None	None	None	None	None	None	None	None	None	None	None
Foxhome	None	None	None	None	None	None	None	None	None	None	None	None
ŗ		İ	İ	į	į	İ	İ	İ	İ	İ	İ	
1304:		İ	İ	İ	į	İ	İ	İ	İ	İ	İ	İ
Glyndon	None	None	None	None	None	None	None	None	None	None	None	None
Borup	None	None	None	None	None	None	None	None	None	None	None	None
Skime	Mono	None	None	None	None	None	None	None	None	None	None	None

Map symbol	January	February	March	April	May	June	July	August	September	October	November	Decembe
and		ļ		ļ			ļ	ļ	ļ			
component name	<u> </u>	<u> </u>	<u> </u>				<u> </u>		1	<u> </u>	<u> </u>	<u> </u>
1305:	 			1					l I			
Hilaire	None	None	None	None	None	None	None	None	None	None	None	None
Espelie	1	None	None	None	None	None	None	None	None	None	None	None
Grano	1	1	1	1			,	None	1	1		
	1	None	None	None	None	None	None		None	None	None	None
Redby	None	None	None	None	None	None	None	None	None	None	None	None
1314:	! 	i		i		i	i	1	Ì			
Tacoosh	None	None	None	None	None	None	None	None	None	None	None	None
Rifle	None	None	None	None	None	None	None	None	None	None	None	None
Sax	None	None	None	None	None	None	None	None	None	None	None	None
	İ			i					i			
1316:	j	j	İ	j	j	i	j	j	j	j	j	j
Wheatville	None	None	None	None	None	None	None	None	None	None	None	None
Augsburg	None	None	None	None	None	None	None	None	None	None	None	None
Grano	None	None	None	None	None	None	None	None	None	None	None	None
1206												
1326:							-				1	!
Augsburg,			1	1					1			
depressional	None	None	None	None	None	None	None	None	None	None	None	None
Wabanica,		!		ļ		ļ	ļ				ļ	ļ
depressional	1	None	None	None	None	None	None	None	None	None	None	None
Sax		None	None	None	None	None	None	None	None	None	None	None
Espelie	1	None	None	None	None	None	None	None	None	None	None	None
Zippel	None	None	None	None	None	None	None	None	None	None	None	None
1327B:	 		1	1					1			 
Karlstad	None	None	None	None	None	None	None	None	None	None	None	None
Marquette		None	None	None	None	None	None	None	None	None	None	None
Sahkahtay	1	None	None	None	None	None	None	None	None	None	None	None
Redby		None	None	None	None	None	None	None	None	None	None	None
kedby	None	None	None	None	None	None	None	None	None	None	None	None
1328:		İ	İ	i	İ	i	i	i	İ			İ
Northwood,												
wooded	None	None	None	None	None	None	None	None	None	None	None	None
Berner, wooded	None	None	None	None	None	None	None	None	None	None	None	None
Grygla	None	None	None	None	None	None	None	None	None	None	None	None
1333:												
Dora, wooded	None	None	None	None	None	None	None	None	None	None	None	None
Lupton	1	None	None	None	None	None	None	None	None	None	None	None
Wildwood		None	None	None	None	None	None	None	None	None	None	None
Auganaush	1	1	None	None		None	None		1	None	None	
Auganausn	None	None	None	None	None	None	None	None	None	None	None	None
1356:		i				i			i			
Water,				1					1	1		
miscellaneous.	i	i	i	i	i	i	i	i	i	İ	i	i

Table 27.--Flooding Frequency and Duration--Continued

Table 27.--Flooding Frequency and Duration--Continued

Map symbol	January	February	March	April	May	June	July	August	September	October	November	Decembe
and	 											
component name	<u> </u>	1	1				_		1	1		1
.399B:	 				l I	l I						
Two Inlets	None	None	None	None	None	None	None	None	None	None	None	None
Wurtsmith	1	1	1		1	,	1		1	1		1
	1	None	None	None	None	None	None	None	None	None	None	None
Zimmerman		None	None	None	None	None	None	None	None	None	None	None
Meehan	None	None	None	None	None	None	None	None	None	None	None	None
401:	 						İ				İ	
Grygla,	i	i	i	i	i	i	i	i	i	i	i	i
depressional	None	None	None	None	None	None	None	None	None	None	None	None
Northwood,	 										1	1
wooded	None	None	None	None	None	None	None	None	None	None	None	None
Chilgren		None	None	None	None	None	None	None	None	None	None	None
Grygla	1	None	None	None	None	None	None	None	None	None	None	None
GIYGIA	None	None	None	None	None	None	None	None	None	None	None	None
402:	İ	j		į	į	į	İ	İ	İ		İ	İ
Leafriver,												
wooded	None	None	None	None	None	None	None	None	None	None	None	None
Cormant	None	None	None	None	None	None	None	None	None	None	None	None
Tawas	None	None	None	None	None	None	None	None	None	None	None	None
Redby	None	None	None	None	None	None	None	None	None	None	None	None
_	j	j	į	j	j	j	j	j	j	İ	İ	İ
404:												
Berner, wooded	None	None	None	None	None	None	None	None	None	None	None	None
Lupton	None	None	None	None	None	None	None	None	None	None	None	None
Northwood,												
wooded	None	None	None	None	None	None	None	None	None	None	None	None
Grygla	None	None	None	None	None	None	None	None	None	None	None	None
405:	 											
.405: Lallie	None	None	None	None	None	None	None	None	None	None	None	None
Sax	1	None	None  None	None	None   None	None	None	None	None	None None	None	None
Wabanica	1	None	None	None	None	None	None	None	1	None	None	None
Wabanica	None	None	None	None	None	None	None	None	None	None	None	None
.414:		i		1		i	i	i			i	
Nereson, very	İ	i	İ	į	i	į	į	İ	İ	İ	į	İ
cobbly	None	None	None	None	None	None	None	None	None	None	None	None
Percy, very	i	i	i	i	i	i	i	i	i	i	i	i
cobbly	None	None	None	None	None	None	None	None	None	None	None	None
Pelan		None	None	None	None	None	None	None	None	None	None	None
Foxhome	1	None	None	None	None	None	None	None	None	None	None	None
	İ	į	i	i	i	i	i	i	İ	İ	i	İ
.428:												
Karlsruhe	None	None	None	None	None	None	None	None	None	None	None	None
Syrene	None	None	None	None	None	None	None	None	None	None	None	None
Ulen	None	None	None	None	None	None	None	None	None	None	None	None

Map symbol and	January	February	March	April	May	June	July	August	September	October	November	Decembe
component name	 	1	1		İ				1		1	1
COMPONENT NAME	I	1	1	1	1	I		1	1	1	1	I
1444:	 											
Wurtsmith	None	None	None	None	None	None	None	None	None	None	None	None
Meehan	None	None	None	None	None	None	None	None	None	None	None	None
Clearriver	None	None	None	None	None	None	None	None	None	None	None	None
Two Inlets	None	None	None	None	None	None	None	None	None	None	None	None
Cormant	None	None	None	None	None	None	None	None	None	None	None	None
1448:	 											
Grano	None	None	None	None	None	None	None	None	None	None	None	None
Percy	!	None	None	None	None	None	None	None	None	None	None	None
Augsburg	'	None	None	None	None	None	None	None	None	None	None	None
Woodslake	'	None	None	None	None	None	None	None	None	None	None	None
1449:	 											
Grano	None	None	None	None	None	None	None	None	None	None	None	None
Percy		None	None	None	None	None	None	None	None	None	None	None
Augsburg		None	None	None	None	None	None	None	None	None	None	None
Woodslake	'	None	None	None	None	None	None	None	None	None	None	None
1807:	 											
Cathro, ponded	  None	None	None	None	None	None	None	None	None	None	None	None
Haug	'	None	None	None	None	None	None	None	None	None	None	None
Seelyeville,												
ponded	None	None	None	None	None	None	None	None	None	None	None	None
Percy		None	None	None	None	None	None	None	None	None	None	None
1808:			1									
Markey, ponded		None	None	None	None	None	None	None	None	None	None	None
Leafriver	None	None	None	None	None	None	None	None	None	None	None	None
Seelyeville,												
ponded		None	None	None	None	None	None	None	None	None	None	None
Cormant	None 	None	None	None	None	None	None	None	None	None	None	None
1918:	İ	i	i	i	İ	i	i	i	i	i	i	i
Croke	None	None	None	None	None	None	None	None	None	None	None	None
Augsburg	None	None	None	None	None	None	None	None	None	None	None	None
Grano	None	None	None	None	None	None	None	None	None	None	None	None
1923B:	 											
Garnes, very	İ	İ	į	į	ĺ	i	į	į	į	į	İ	i
stony	None	None	None	None	None	None	None	None	None	None	None	None
Chilgren	'	None	None	None	None	None	None	None	None	None	None	None
Eckvoll		None	None	None	None	None	None	None	None	None	None	None
Pelan	None	None	None	None	None	None	None	None	None	None	None	None

Table 27.--Flooding Frequency and Duration--Continued

Table 27.--Flooding Frequency and Duration--Continued

Map symbol and	   January 	   February 	   March	   April 	   May 	   June 	   July 	   August 	  September 	   October 	   November 	   December 
component name		<u> </u>		<u> </u>	<u> </u>		<u> </u>		<u> </u>			
1984:	 		 	 	 	 		 	 	 		 
Leafriver	None	None	None	None	None	None	None	None	None	None	None	None
Cormant	None	None	None	None	None	None	None	None	None	None	None	None
Markey	None	None	None	None	None	None	None	None	None	None	None	None
Redby	None	None	None	None	None	None	None	None	None	None	None	None
W:												
Water.												

Table 28.--Ponding Frequency, Duration, and Depth

(Depths of ponding are in feet.)

Map symbol   and   component name	January	February   	March	April	May   	June	July	August	September	October   	November   	December
47:   Colvin    	None	  None     	  None   	Occasional Brief Depth:	  Occasional   Brief   Depth:   0.3	Occasional Very brief Depth: 0.3	Rare   Very   brief   Depth:	  None     	Rare  Very  brief  Depth:  0.3	Occasional Very brief Depth:	  Occasional   Brief   Depth:   0.3	None
Bearden	None	  None	  None	None	  None	None	None	  None	None	  None	  None	None
Grano      	None	  None     	  None     	Occasional Brief Depth:	Occasional   Brief   Depth:   0.3	Occasional Very brief Depth: 0.3	Rare   Very   brief   Depth:	  Rare   Very   brief   Depth:   0.2	Rare  Very  brief  Depth:  0.2	Occasional   Very   brief   Depth:   0.2	  Occasional   Brief   Depth:   0.3	None
Sax	Occasional Long Depth: 0.5	  Cccasional   Long   Depth:   0.5	   Occasional   Long   Depth:   0.5	Frequent   Long   Depth:   0.5	  Frequent   Long   Depth:   0.5	Frequent Brief Depth: 0.5	Occasional Very brief Depth:	Rare   Very   brief   Depth:   0.3	Occasional Brief Depth: 0.3	  Occasional   Brief   Depth:   0.5	  Occasional   Long   Depth:   0.5	Occasiona   Long   Depth:   0.5
48B:		<u> </u>									 	
Hiwood	None	None	None	None	None	None	None	None	None	None	None 	None
Redby	None	None	None	None	None	None	None	None	None	None	None	None
Clearriver	None	None	None	None	None	None	None	None	None	None	  None	None
	None	  None     	  None     	Occasional Brief Depth:	  Occasional   Very   brief   Depth:   0.3	Rare Very brief Depth: 0.2	None	  None     	  None     	  Rare   Very   brief   Depth:   0.2	  None     	     
  Zimmerman	None	  None	  None	None	  None	None	None	  None	None	  None	  None	  None
52:		 	 	 	 			 		 	 	
Augsburg	None	  None     	  None   	Occasional   Brief   Depth:   0.3	Occasional Brief Depth:	Occasional Very brief Depth: 0.3	None	  None     	Rare   Very   brief   Depth:   0.3	Occasional Brief Depth:	Occasional Brief Depth:	None
  Croke	None	  None	None	None	  None	None	None	None	None	  None	  None	  None

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January   	February	March   	April    -	May   	June   	July   	August	September	October	November	December
52:	 		 	 	 	 	 			 		
Grano	  None     	  None     	  None     	Occasional Brief Depth:	Occasional Brief Depth:	Occasional Very brief Depth:	Rare   Very   brief   Depth:   0.2	Rare   Very   brief   Depth:   0.2	Rare   Very   brief   Depth:   0.2	Occasional Very brief Depth:	Occasional Brief Depth:	  None     
Sago	Occasional   Long   Depth:   0.5	Occasional   Long   Depth:   0.5	Occasional Long Depth:	   Frequent   Long   Depth:   0.5	  Frequent   Long   Depth:   0.5	  Frequent   Brief   Depth:   0.5	Rare   Very   brief   Depth:   0.3	Rare Very brief Depth:	Occasional Brief Depth:	Occasional Brief Depth:	Occasional   Long   Depth:   0.5	Occasiona Long Depth: 0.5
59:	[		[			[					1	
Grimstad	None	None	None	None	None	None	None	None	None	None	None	None
Strathcona	  None     	  None       	  None     	Occasional Brief Depth:	Occasional Very brief Depth:	Rare   Very   brief   Depth:   0.1	  None     	None     	None	   Rare   Very   brief   Depth:   0.1	Rare   Very   brief   Depth:   0.1	  None       
Foxhome	  None 	None	  None 	  None 	  None 	  None 	  None 	None	  None 	  None 	None	  None 
64: Ulen	None	None	None	  None	  None	None	None	None	None	  None	None	None
Rosewood			None		Occasional Very brief Depth:		None	None	None	Rare   Very   brief   Depth:	None	  None   
Redby	  None	  None	  None	  None	  None 	  None	  None	None	  None	  None 	  None	  None
Rushlake	  None 	None	  None 	  None 	  None 	  None 	  None 	None	  None	  None 	  None 	  None 
65:								1	1			[
Foxhome	None	None	None	None	None	None	None	None	None	None	None	None
Strandquist	  None       	  None       	  None       	  Occasional   Brief   Depth:   0.3	  Occasional   Very   brief   Depth:   0.3	  Rare   Very   brief   Depth:   0.3	  None       	  None     	None	  Rare   Very   brief   Depth:   0.3	  None       	  None       

Map symbol and component name	January   	February   	March 	April	May 	June   	July   	August	September	October   	November 	December   
65:	 	 	 	 	 	 	 			 	 	 
Skagen	None	None	None	None	None	None	None	None	None	None	None	None
67:												
Bearden	None 	None	None	None	None	None	None	None	None	None	None	None
Colvin	None         	None         	None       	Occasional Brief Depth:	Occasional Brief Depth:	Occasional Very brief Depth:	Rare   Very   brief   Depth:   0.3	None       	Rare   Very   brief   Depth:   0.3	Occasional Very brief Depth:	Occasional Brief Depth:	None         
77:								İ	İ		İ	İ
Garnes	None	None	None	None	None	None	None	None	None	None	None	None
Chilgren	  None     	  None     	  None     	Occasional Brief Depth:	Occasional Brief Depth:	Occasional Very brief Depth:	  None       	  None     	Rare   Very   brief   Depth:   0.3	Rare   Very   brief   Depth:   0.3	Occasional Brief Depth:	  None       
Eckvoll	  None	None	  None	None	  None	  None	None	None	None	None	None	None
Pelan	  None	None	None	None	None	  None	None	None	None	None	None	None
111:	 	 	 	 	 	 					 	 
Hangaard	None         	None         	None       	Occasional Very brief Depth:	Rare   Very   brief   Depth:   0.3	Rare   Very   brief   Depth:   0.1	None         	None         	None     	None         	None       	None         
Deerwood	Occasional Long Depth:	Occasional Long Depth:	Occasional Long Depth:	Frequent   Long   Depth:   0.5	Frequent   Long   Depth:   0.5	Frequent   Brief   Depth:   0.5	Rare   Very   brief   Depth:   0.3	Rare   Very   brief   Depth:   0.3	Occasional Brief Depth:	Occasional Brief Depth:	Occasional Long Depth:	Occasiona   Long   Depth:   0.5
Rushlake	  None	  None	  None	None	  None	  None	  None	None	None	  None	None	  None
Rosewood	  None     	  None     	  None     	  Occasional   Brief   Depth:   0.3	  Occasional   Very   brief   Depth:   0.3	  Rare   Very   brief   Depth:   0.2	  None     	  None     	  None   	  Rare   Very   brief   Depth:   0.2	  None     	  None     

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	   February   	March	April	   May 	   June 	   July 	August	September	   October   	   November   	   December   
116: Redby	    None	    None	    None	    None	    None	    None	    None	    None	    None	    None	    None	    None
Cormant	  None 	  None     	  None     	Occasional Brief Depth:	  Occasional   Very   brief   Depth:   0.3	  Rare   Very   brief   Depth:   0.2	  None     	  None     	  None   	Rare Very brief Depth:	  None     	  None     
Hiwood	None	  None	None	None	  None	  None	  None	None	None	  None	  None	  None
Leafriver	Occasional   Long   Depth:   0.5	  Occasional   Long   Depth:   0.5	  Occasional   Long   Depth:   0.5	Frequent   Long   Depth:   0.5	  Frequent   Long   Depth:   0.5	  Frequent   Brief   Depth:   0.5	  Rare   Very   brief   Depth:   0.3	Rare  Very  brief  Depth:  0.3	Occasional Brief Depth: 0.3	  Occasional   Brief   Depth:   0.5	  Occasional   Long   Depth:   0.5	  Occasional   Long   Depth:   0.5
117:		 				 	 			 	 	 
Cormant	None	None       	None       	Occasional Brief Depth:	Occasional Very brief Depth:	Rare   Very   brief   Depth:   0.2	None       	None     	None     	Rare   Very   brief   Depth:   0.2	None     	None     
Leafriver	Occasional Long Depth:	  Occasional   Long   Depth:   0.5	Occasional Long Depth:	Frequent   Long   Depth:   0.5	  Frequent   Long   Depth:   0.5	  Frequent   Brief   Depth:   0.5	  Rare   Very   brief   Depth:   0.3	Rare   Very   brief   Depth:   0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth:	  Occasional   Long   Depth:   0.5	  Occasional   Long   Depth:   0.5
Epoufette	None	  None     	  None     	Occasional Very brief Depth:	  Rare   Very   brief   Depth:   0.3	  Rare   Very   brief   Depth:   0.1	  None     	  None     	None	  Rare   Very   brief   Depth:   0.1	  None     	  None     
Redby	None	  None	None	None	  None	  None	  None	None	None	  None	  None	  None
Grygla, depressional	Occasional Long Depth:	  Occasional   Long   Depth:   0.3	  Cccasional   Long   Depth:   0.3	  Frequent   Long   Depth:   0.3	  Frequent   Long   Depth:   0.3	  Occasional   Brief   Depth:   0.3	  Rare   Very   brief   Depth:   0.2	Rare Very brief Depth:	  Rare   Very   brief   Depth:   0.2	  Occasional   Brief   Depth:   0.3	  Occasional   Long   Depth:   0.3	  Occasional   Long   Depth:   0.3

Map symbol   and   component name	January	February   	March	April   	May   	June   	July   	August	September 	October   	November   	Decembe
133:		 	 	 	 	 	 					
Dalbo	None	  None 	None	  None	  None	  None 	  None 	None	None	  None	  None	  None
Mustinka	None	  None     	     	Occasional Brief Depth:	Occasional Brief Depth:	Occasional Very brief Depth:	Rare   Very   brief   Depth:   0.2	Rare   Very   brief   Depth:   0.2	Rare   Very   brief   Depth:   0.2	Occasional Very brief Depth:	Occasional Brief Depth:	  None       
Moranville	None	  None 	  None 	  None 	  None 	  None 	  None 	None	None	  None 	  None 	  None 
145:				[								
Enstrom	None	None	None	None	None	None	None	None	None	None	None	None
Grygla        	None	  None     	None	Occasional Brief Depth:	Occasional   Very   brief   Depth:   0.3	Rare   Very   brief   Depth:	  None     	None     	None   	Rare   Very   brief   Depth:   0.1	Rare   Very   brief   Depth:   0.1	  None     
Redby	None	  None 	  None 	  None 	  None 	  None 	  None 	  None	None	  None 	  None 	  None 
Pelan	None	None	None	None	None	None	None	None	None	None	None	None
147:		 	 	 	 	l I	 	}	}	 		 
Spooner	None	  None     	None   	Occasional Brief Depth:	Occasional Brief Depth:	Occasional Very brief Depth:	  None       	None     	Rare   Very   brief   Depth:   0.3	Occasional Very brief Depth:	Occasional Brief Depth:	  None       
Baudette	None	  None 	None	  None	  None	  None 	  None 	None	None	  None	  None	  None
Grygla	None	  None   	     	Occasional Brief Depth:	Occasional Very brief Depth:	Rare   Very   brief   Depth:   0.1	  None     	None     	None	Rare   Very   brief   Depth:   0.1	Rare   Very   brief   Depth:   0.1	  None     
	Occasional Long Depth: 0.5	  Occasional   Long   Depth:   0.5	  Occasional   Long   Depth:   0.5	  Frequent   Long   Depth:   0.5	  Frequent   Long   Depth:   0.5	  Frequent   Brief   Depth:   0.5	  Rare   Very   brief   Depth:	Rare   Very   brief   Depth:	Occasional Brief Depth:	  Occasional   Brief   Depth:   0.5	  Occasional   Long   Depth:   0.5	  Occasiona   Long   Depth:   0.5

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February   	March   	April   	May   	June   	July   	August	September 	October   	November   	December   
158B:						 						
Zimmerman	None	  None	  None	None	  None	  None	  None	None	None	  None	  None	None
Zimmerman	None	None	None	None	None	None	None	None	None	None	None	None
Hiwood	None	  None	None	None	None	  None	None	None	None	None	None	None
Two Inlets	None	  None	  None	None	  None	  None	  None	None	None	  None	  None	  None
Redby	None	  None	  None	None	  None	  None	  None	None	None	None	  None	None
L67B:		 	 		 	 	 			 	 	 
Baudette	None	None	None	None	None	None	None	None	None	None	None	None
Spooner	  None 	  None     	  None     	Occasional Brief Depth:	  Occasional   Brief   Depth:   0.3	  Occasional   Very   brief   Depth:   0.3	  None       	  None   	Rare   Very   brief   Depth:   0.3	  Occasional   Very   brief   Depth:   0.3	  Occasional   Brief   Depth:   0.3	  None       
Moranville	  None	  None	  None	  None	  None	  None	  None	None	None	  None	  None	  None
187:		 				 	 				 	
Haug	Occasional	Occasional	Occasional	Frequent	Frequent	Frequent	Rare	Rare	Occasional	Occasional	Occasional	Occasional
	Long	Long	Long	Long	Long	Brief	Very	Very	Brief	Brief	Long	Long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	Depth:	Depth:	Depth:	Depth:
	0.5	0.5	0.5	0.5	0.5	0.5	Depth:	Depth:	0.3	0.5	0.5	0.5
Percy	None	  None     	  None     	Occasional Brief Depth:	  Occasional   Brief   Depth:   0.3	  Occasional   Very   brief   Depth:   0.3	  None       	None	Rare   Very   brief   Depth:   0.3	  Rare   Very   brief   Depth:   0.3	  Occasional   Brief   Depth:   0.3	  None     
Cathro		000001	000000000000000000000000000000000000000	Fromient	    Frequent	Occasional	Paro	  Rare	Rare		    Occasional	000001000
Cacinio	Long	Long	Long	Long	Long	Brief	Very	Very	Brief	Brief	Long	Long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	Depth:	Depth:	Depth:	Depth:
	0.3	0.3	0.5	0.5	0.5	0.5	Depth:   0.3	Depth:	0.3	0.3	0.3	0.3
Boash	  None 	  None 	  None 	Brief	  Occasional   Brief	Very	Very	  Rare   Very	  Rare   Very	Very	  Occasional   Brief	  None 
				Depth:	Depth:	brief	brief	brief	brief	brief	Depth:	
j				0.3	0.3	Depth:	Depth:	Depth:	Depth:	Depth:	0.3	

Map symbol and component name	January	February	March	April	May 	June	July	August	September	October 	November 	December
191: Epoufette	None	    None   	    None   	Occasional Very brief Depth:	  Rare   Very   brief   Depth:   0.3	  Rare   Very   brief   Depth:	  None   	  None   	    None   	  Rare   Very   brief   Depth:   0.1	    None   	    None   
Cormant	None	  None     	  None     		Occasional Very brief Depth:	0.1    Rare   Very   brief   Depth:   0.2	  None     	  None     	  None   	0.1    Rare   Very   brief   Depth:   0.2	  None     	    None     
Leafriver	Occasional   Long   Depth:   0.5	  Occasional   Long   Depth:   0.5	Occasional Long Depth:	Frequent   Long   Depth:   0.5	  Frequent   Long   Depth:   0.5	  Frequent   Brief   Depth:   0.5	Rare   Very   brief   Depth:   0.3	  Rare   Very   brief   Depth:   0.3	  Occasional   Brief   Depth:   0.3	Occasional Brief Depth:	  Occasional   Long   Depth:   0.5	  Occasional   Long   Depth:   0.5
Meehan	None	  None	  None	None	  None	  None	None	None	None	  None	  None	  None
202: Meehan	None	    None	    None	None	    None	    None	    None	None	None	    None	    None	    None
Cormant	None	  None     	  None     	Occasional Brief Depth:	  Occasional   Very   brief   Depth:   0.3	  Rare   Very   brief   Depth:   0.2	None	  None     	  None   	  Rare   Very   brief   Depth:   0.2	  None     	  None     
Wurtsmith	None	  None	  None	None	  None	  None	None	None	None	  None	  None	  None
Leafriver	Occasional Long Depth:	  Occasional   Long   Depth:   0.5	  Occasional   Long   Depth:   0.5	Frequent   Long   Depth:   0.5	  Frequent   Long   Depth:   0.5	  Frequent   Brief   Depth:   0.5	Rare   Very   brief   Depth:   0.3	Rare  Very  brief  Depth:  0.3	Occasional Brief Depth: 0.3	  Occasional   Brief   Depth:   0.5	  Occasional   Long   Depth:   0.5	  Occasional   Long   Depth:   0.5 
205: Karlstad	None	    None	  None	None	  None	  None	None	None	None	  None	    None	None
Sahkahtay	  None 	  None     	  None     	Occasional Very brief Depth:	  Rare   Very   brief   Depth:   0.3	  Rare   Very   brief   Depth:   0.1	  None   	  None     	  None   	  Rare   Very   brief   Depth:   0.1	  None     	  None     

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January   	February 	March   	April   	May   	June 	July   	August	September 	October   	November   	Decemb
	İ	i	İ	İ			i I	i i	i i	i i	i I	İ
05:	İ	İ	į	İ	İ		İ	j	İ	į	İ	İ
Marquette	None	None	None	None	None	None	None	None	None	None	None	None
Redby	  None	None	None	None	None	None	  None	None	None	None	  None	None
Pits, gravel.	 				   		   				 	
42B:	 											
Marquette	None	None	None	None	None	None	None	None	None	None	None	None
Karlstad	None	None	None	None	None	None	None	None	None	None	None	None
Pits, gravel.	   				   		   				   	
80:	 		İ		 		 	ì			! 	
Pelan	None	None	None	None	None	None	None	None	None	None	None	None
Strandquist	None	None	None	Ogganaional	Occasional	   Dama	  None	None	None	Rare	  None	None
strandquist	None	None	None	Brief	Very	Very	None	None	None	Very	None	None
	İ	i	İ	Depth:	brief	brief	İ	İ	İ	brief	İ	İ
	ĺ	İ	İ	0.3	Depth:	Depth:	ĺ	Ì	İ	Depth:	ĺ	
					0.3	0.3				0.3		
Garnes	  None	None	None	None	  None	None	  None	None	None	None	  None	None
Marquette	  None	None	None	None	  None	None	  None	None	None	None	  None	None
Pits, gravel.	 	-	 		 		 				 	
79:	 				 		 				 	 
Percy, very	İ	i	İ	İ	İ		İ	į	į	İ	İ	į
cobbly	None	None	None	1	Occasional		None	None	Rare	Rare	Occasional	None
				Brief	Brief	Very		ļ	Very	Very	Brief	
				Depth:	Depth:	brief			brief	brief	Depth:	
	 			0.3	0.3	Depth:			Depth:	Depth:	0.3	
_		į	İ	į				į	1			İ
Boash	None	None	None		Occasional			Rare	Rare	1	Occasional	None
	 			Brief	Brief	Very	Very	Very	Very	Very	Brief	
	I I		I	Depth:	Depth:	brief Depth:	brief   Depth:	brief Depth:	brief Depth:	brief   Depth:	Depth:	 
							DEDCII.	Debrii	Dencir:	- Denemi		

Map symbol and component name	January	February 	March	April 	May	June	July	August	September	October   	November	December
379:	 	 				 	 		l I	 	 	
Strandquist	  None     	  None     	  None     	Occasional Brief Depth:	Occasional Very brief Depth:	Rare   Very   brief   Depth:   0.3	  None       	None     	None	Rare   Very   brief   Depth:   0.3	  None       	  None       
Haug	Occasional Long Depth:	Occasional Long Depth: 0.5	Occasional Long Depth:	  Frequent   Long   Depth:   0.5	Frequent   Long   Depth:   0.5	  Frequent   Brief   Depth:   0.5	Rare Very brief Depth:	Rare   Very   brief   Depth:   0.3	Occasional Brief Depth:	Occasional Brief Depth:	Occasional Long Depth: 0.5	  Occasiona   Long   Depth:   0.5
Skagen, very		İ		İ		İ	İ	j	İ	İ	i	
cobbly	None	None	None	None	None	None	None	None	None	None	None	None
383:	 	 	 	 	 	 	 			 	 	 
Percy	None       	None       	None       	Occasional Brief Depth: 0.3	Occasional Brief Depth:	Occasional Very brief Depth:	None         	None       	Rare   Very   brief   Depth:   0.3	Rare   Very   brief   Depth:   0.3	Occasional   Brief   Depth:   0.3	None         
Boash	  None   	  None     	  None   	Occasional Brief Depth:	Occasional Brief Depth:	Occasional Very brief Depth:	Rare   Very   brief   Depth:   0.2	Rare   Very   brief   Depth:   0.2	Rare   Very   brief   Depth:   0.2	Occasional Very brief Depth:	Occasional Brief Depth:	  None     
Strandquist	  None   	  None   	  None   	Occasional Brief Depth:	Occasional Very brief Depth:	Rare   Very   brief   Depth:   0.3	  None     	None     	None	Rare   Very   brief   Depth:   0.3	  None     	  None     
Haug	  Occasional   Long   Depth:   0.5	  Occasional   Long   Depth:   0.5	  Occasional   Long   Depth:   0.5	  Frequent   Long   Depth:   0.5	  Frequent   Long   Depth:   0.5	  Frequent   Brief   Depth:   0.5	  Rare   Very   brief   Depth:   0.3	Rare  Very  brief  Depth:  0.3	Occasional Brief Depth: 0.3	  Occasional   Brief   Depth:   0.5	  Occasional   Long   Depth:   0.5	  Occasiona   Long   Depth:   0.5
Skagen	None	  None	  None	  None	  None	  None	None	None	None	  None	  None	None

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January   	February   	March 	April	May   	June	July	August	September 	October   	November	December
384:	 	 	[ [	 	 		 			 		 
Percy,	İ	İ	i		İ		İ	i	i	İ		
depressional	Occasional	Occasional	Occasional	Frequent	Frequent	Occasional	Rare	Rare	Rare	Occasional	Occasional	Occasional
-	Long	Long	Long	Long	Long	Brief	Very	Very	Brief	Brief	Long	Long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	Depth:	Depth:	Depth:	Depth:
	0.5	0.5	0.5	0.5	0.5	0.5	Depth:	Depth:	0.3	0.3	0.5	0.5
	ĺ	ĺ	İ		į		0.3	0.3	į			
Haug	  Occasional	  Occasional	Occasional	  Frequent	  Frequent	  Frequent	  Rare	Rare	Occasional	  Occasional	  Occasional	  Occasional
-	Long	Long	Long	Long	Long	Brief	Very	Very	Brief	Brief	Long	Long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	Depth:	Depth:	Depth:	Depth:
	0.5	0.5	0.5	0.5	0.5	0.5	Depth:	Depth:	0.3	0.5	0.5	0.5
			ĺ				0.3	0.3	İ	  -		 
Percy	  None	  None	None	Occasional	  Occasional	  Occasional	  None	None	Rare	  Rare	  Occasional	  None
	ĺ	ĺ	Ì	Brief	Brief	Very	ĺ	İ	Very	Very	Brief	
				Depth:	Depth:	brief			brief	brief	Depth:	
			1	0.3	0.3	Depth:			Depth:	Depth:	0.3	
	 	 		 	 	0.3	 		0.3	0.3		 
Boash	  None	  None	None	Occasional	Occasional	  Occasional	Rare	Rare	Rare	Occasional	  Occasional	  None
				Brief	Brief	Very	Very	Very	Very	Very	Brief	
			1	Depth:	Depth:	brief	brief	brief	brief	brief	Depth:	
				0.3	0.3	Depth:	Depth:	Depth:	Depth:	Depth:	0.3	
	 	 		 		0.3	0.2	0.2	0.2	0.2		 
387:												 
Roliss,			1									
depressional	1	1		Frequent	Frequent	Occasional	1	Rare	Rare	1	Occasional	
	Long	Long	Long	Long	Long	Brief	Very	Very	Brief	Brief	Long	Long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	Depth:	Depth:	Depth:	Depth:
	0.5	0.5	0.5	0.5	0.5	0.5	Depth:	Depth:	0.3	0.3	0.5	0.5
	 	 	 	 	 		0.3	0.3	1	 		 
Haug					Frequent	Frequent	Rare	Rare		Occasional		
	Long	Long	Long	Long	Long	Brief	Very	Very	Brief	Brief	Long	Long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	Depth:	Depth:	Depth:	Depth:
	0.5	0.5	0.5	0.5	0.5	0.5 	Depth:	Depth:	0.3	0.5	0.5	0.5
			<u> </u>		<u> </u>			į	į_	<u>.</u>		
Roliss	None	None	None		Occasional		None	None	Rare	Rare	Occasional	None
	l I	l I	1	Brief	Brief	Very			Very	Very	Brief	
	l I	l I	1	Depth:	Depth:	brief			brief	brief	Depth:	
	 	 	1	0.3	0.3	Depth:	 		Depth:	Depth:	0.3	
	ļ.	ļ.	Į.		Į.	0.3	ļ.	!	0.3	0.3	l	ļ

Map symbol and component name	January   	February   	March   	April   	May	June   	July   	August 	September	October   	November   	December   
	<u>'                                     </u>	İ	1	<u> </u>	<u>'                                     </u>	<u>'                                     </u>		i	i		İ	
404: Chilgren	  None 	  None 	  None 	Occasional Brief Depth:	Occasional Brief Depth:	Occasional Very brief	  None 	  None 	Rare   Very   brief	  Rare   Very   brief	Occasional Brief Depth:	  None 
	   	 	   	0.3	0.3	Depth:	 		Depth:	Depth:	0.3	 
Garnes	  None 	  None	  None 	  None 	None	  None 	  None 	  None	  None	  None 	  None 	  None 
Grygla	  None     	  None       	  None     	Occasional Brief Depth:	Occasional Very brief Depth:	Rare   Very   brief   Depth:   0.1	  None       	  None     	None	Rare   Very   brief   Depth:   0.1	Rare   Very   brief   Depth:   0.1	  None       
Haug	'				Frequent	Frequent	Rare	Rare	1	1	Occasional	
	Long	Long	Long	Long	Long	Brief	Very	Very	Brief	Brief	Long	Long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	Depth:	Depth:	Depth:	Depth:
	0.5	0.5	0.5	0.5	0.5	0.5	Depth:	Depth:	0.3	0.5	0.5	0.5
412:	 	 		 		 	 	l I			 	 
Mavie	None     	None       	None       	Occasional Brief Depth:	Occasional Very brief Depth:	Rare   Very   brief   Depth:   0.3	None       	None     	None	Rare   Very   brief   Depth:   0.3	None       	None       
Foxhome	  None	  None	  None	  None	None	  None	  None	None	None	  None	  None	  None
Northwood	  Occasional	Occasional	Occasional	Frequent	Frequent	  Frequent	Rare	Rare	Occasional	  Occasional	Occasional	  Occasiona
	Long	Long	Long	Long	Long	Brief	Very	Very	Brief	Brief	Long	Long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	Depth:	Depth:	Depth:	Depth:
	0.5	0.5	0.5	0.5	0.5	0.5	Depth:	Depth:	0.3	0.5	0.5	0.5
Percy, very	 					 	 	l I				 
cobbly	None	None	None	Occasional		Occasional	None	None	Rare	Rare	Occasional	None
				Brief	Brief	Very			Very	Very	Brief	
		1		Depth:	Depth:	brief			brief	brief	Depth:	
				0.3	0.3	Depth:	ļ	Ţ	Depth:	Depth:	0.3	ļ

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February   	March	April	May   	June	July	August	September	October   	November	December
432:												 
Strandquist	None       	None         	None         	Occasional Brief Depth:	Occasional Very brief Depth:	Rare   Very   brief   Depth:   0.3	None         	None       	None     	Rare   Very   brief   Depth:	None	None
Percy, very cobbly	  None     	  None       	  None       	Occasional Brief Depth:	  Occasional   Brief   Depth:   0.3	Occasional Very brief Depth:	  None     	  None     	  Rare   Very   brief   Depth:   0.3	  Rare   Very   brief   Depth:   0.3	Occasional Brief Depth:	  None     
Haug	Occasional	Occasional	Occasional	Frequent	Frequent	Frequent	Rare	Rare		Occasional	Occasional	  Occasiona:
	Long   Depth:   0.5 	Long   Depth:   0.5	Long   Depth:   0.5	Long Depth: 0.5	Long   Depth:   0.5	Brief Depth: 0.5	Very brief Depth: 0.3	Very   brief   Depth:   0.3	Brief   Depth:   0.3	Brief   Depth:   0.5 	Long Depth: 0.5	Long   Depth:   0.5 
Boash	  None     	  None     	  None     	Occasional   Brief   Depth:   0.3	Occasional Brief Depth:	Occasional   Very   brief   Depth:   0.3	Rare   Very   brief   Depth:   0.2	Rare   Very   brief   Depth:   0.2	Rare   Very   brief   Depth:   0.2	Occasional Very brief Depth:	Occasional Brief Depth: 0.3	  None     
Foxhome	  None 	  None 	  None 	  None 	  None 	None	  None 	  None	None	  None 	None	  None 
433:												
Syrene, depressional	  Occasional	  Occasional	Occasional	  Frequent	Frequent	  Occasional	  Rare	Rare	Rare	  Occasional	  Occasional	  Occasiona:
	Long Depth: 0.5	Long Depth: 0.5	Long Depth: 0.5	Long Depth: 0.5	Long Depth: 0.5	Brief Depth: 0.5	Very brief Depth:	Very brief Depth:	Brief Depth: 0.3	Brief Depth: 0.3	Long Depth: 0.5	Long Depth: 0.5
Deerwood	  Occasional   Long   Depth:   0.5	  Occasional   Long   Depth:   0.5	Occasional   Long   Depth:   0.5	Frequent   Long   Depth:   0.5	  Frequent   Long   Depth:   0.5	Frequent Brief Depth:	  Rare   Very   brief   Depth:   0.3	Rare   Very   brief   Depth:   0.3	Occasional   Brief   Depth:   0.3	Occasional Brief Depth:	Occasional   Long   Depth:   0.5	  Occasiona   Long   Depth:   0.5

Map symbol and component name	January	February 	March	April	May 	June	July	August	September	October	November	December
433:	 	 	 	 	 	 	 			 	 	 
Rosewood	None       	None         	None       	Occasional Brief Depth:	Occasional   Very   brief   Depth:   0.3	Rare   Very   brief   Depth:   0.2	None         	None       	None     	Rare   Very   brief   Depth:   0.2	None         	None         
Syrene	  None   	  None     	  None     	Occasional Very brief Depth:	Rare   Very   brief   Depth:   0.3	Rare   Very   brief   Depth:   0.1	  None       	None	None     	  None   	  None     	  None       
435:	 	İ		 	 			ì		 	i	
Syrene	None	None       	None       	Occasional   Very   brief   Depth:   0.3	Rare   Very   brief   Depth:   0.3	Rare   Very   brief   Depth:   0.1	None       	None     	None     	None       	None       	None       
Rosewood	  None   	  None     	  None   	Occasional Brief Depth:	Occasional Very brief Depth:	Rare   Very   brief   Depth:   0.2	  None     	None   	None   	Rare   Very   brief   Depth:   0.2	  None     	  None     
Syrene,	 	 	 	 	 	 	 			 	 	 
depressional	Occasional Long Depth:	Occasional Long Depth:	Occasional Long Depth:	Frequent Long Depth: 0.5	Frequent   Long   Depth:   0.5	Occasional Brief Depth:	Rare   Very   brief   Depth:   0.3	Rare   Very   brief   Depth:   0.3	Rare   Brief   Depth:   0.3	Occasional Brief Depth:	Occasional Long Depth:	Occasiona   Long   Depth:   0.5
Karlsruhe	  None	  None	  None	  None	  None	None	None	None	None	  None	None	  None
Deerwood	  Occasional   Long   Depth:   0.5	  Occasional   Long   Depth:   0.5	  Occasional   Long   Depth:   0.5	  Frequent   Long   Depth:   0.5	  Frequent   Long   Depth:   0.5	  Frequent   Brief   Depth:   0.5	  Rare   Very   brief   Depth:   0.3	  Rare   Very   brief   Depth:   0.3	  Occasional   Brief   Depth:   0.3	  Occasional   Brief   Depth:   0.5	  Occasional   Long   Depth:   0.5	  Occasiona   Long   Depth:   0.5

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Table 28 Ponding Frequency, Duration, and DepthContinued	Table	28.	Ponding	Frequency,	Duration,	and	DepthContinued
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Map symbol and component name	January   	February 	March	April	May   	June	July	August	September	October	November	December
439: Strathcona	    None     	    None     	    None     	  Occasional   Brief   Depth:   0.3	  Occasional   Very   brief   Depth:   0.3	Rare Very brief Depth:	  None     	    None   	  None   	  Rare   Very   brief   Depth:   0.1	  Rare   Very   brief   Depth:   0.1	  None     
Northwood	  Occasional   Long   Depth:   0.5	  Occasional   Long   Depth:   0.5	  Occasional   Long   Depth:   0.5	  Frequent   Long   Depth:   0.5	  Frequent   Long   Depth:   0.5	Frequent Brief Depth:	  Rare   Very   brief   Depth:   0.3	Rare Very brief Depth:	Occasional Brief Depth:	Occasional Brief Depth:		Occasiona: Long Depth:
Percy	  None   	  None     	  None     	  Occasional   Brief   Depth:   0.3	  Occasional   Brief   Depth:   0.3	Occasional Very brief Depth:	  None     	  None     	Rare   Very   brief   Depth:   0.3	  Rare   Very   brief   Depth:   0.3	  Occasional   Brief   Depth:   0.3	  None     
Grimstad	  None	  None	None	  None	  None	None	  None	None	None	  None	  None	  None
Strandquist	  None     	  None     	  None     	  Occasional   Brief   Depth:   0.3	  Occasional   Very   brief   Depth:   0.3	Rare   Very   brief   Depth:	  None       	  None     	None     	  Rare   Very   brief   Depth:   0.3	  None     	  None     
481:	 	 		 	 		 			 	 	 
Kratka	None       	None       	None       	Occasional Brief Depth:	Occasional   Very   brief   Depth:   0.3	Rare   Very   brief   Depth:	None       	None     	None	Rare   Very   brief   Depth:   0.1	Rare   Very   brief   Depth:   0.1	None     
Northwood	  Occasional   Long   Depth:   0.5	  Occasional   Long   Depth:   0.5	  Occasional   Long   Depth:   0.5	  Frequent   Long   Depth:   0.5	  Frequent   Long   Depth:   0.5	Frequent Brief Depth: 0.5	  Rare   Very   brief   Depth:   0.3	Rare  Very  brief  Depth:  0.3	Occasional Brief Depth: 0.3	  Occasional   Brief   Depth:   0.5	  Occasional   Long   Depth:   0.5	  Occasiona   Long   Depth:   0.5
Percy	  None       	  None       	  None       	  Occasional   Brief   Depth:   0.3	  Occasional   Brief   Depth:   0.3	Occasional Very brief Depth:	  None       	  None     	Rare   Very   brief   Depth:   0.3	  Rare   Very   brief   Depth:   0.3	  Occasional   Brief   Depth:   0.3	  None     

Map symbol and component name	January   	February   	March   	April   	May   	June   	July   	August 	September 	October   	November   	December   
481:	 	 		 	 	 						
Enstrom	None	None	None	None	None	None	None	None	None	None	None	None
Strandquist	  None     	  None       	  None       	Occasional Brief Depth:	  Occasional   Very   brief   Depth:   0.3	  Rare   Very   brief   Depth:   0.3	  None       	  None     	None	  Rare   Very   brief   Depth:   0.3	  None       	  None       
482:	! 	l I	İ	 	! 	! 		i			İ	
Grygla	None     	None       	None       	Occasional Brief Depth:	Occasional Very brief Depth:	Rare   Very   brief   Depth:   0.1	None         	None     	None	Rare Very brief Depth:	Rare   Very   brief   Depth:   0.1	None       
Chilgren	  None   	  None   	  None   	Occasional Brief Depth:	Occasional Brief Depth:	Occasional Very brief Depth:	  None     	None   	Rare   Very   brief   Depth:   0.3	Rare   Very   brief   Depth:   0.3	Occasional Brief Depth:	  None     
Grygla,	 	 	 		 	 	 			 	 	 
depressional	Occasional Long Depth:	Occasional Long Depth:	Occasional Long Depth:	Frequent Long Depth:	Frequent Long Depth: 0.3	Occasional Brief Depth:	Rare   Very   brief   Depth:   0.2	Rare   Very   brief   Depth:   0.2	Rare   Very   brief   Depth:   0.2	Occasional Brief Depth:	Occasional   Long   Depth:   0.3	Occasional Long Depth:
Enstrom	  None	  None	  None	  None	  None	  None	  None	None	None	  None	  None	  None
Northwood	  Occasional   Long   Depth:   0.5	  Occasional   Long   Depth:   0.5	Occasional   Long   Depth:   0.5	Frequent Long Depth:	  Frequent   Long   Depth:   0.5	  Frequent   Brief   Depth:   0.5	Rare Very brief Depth:	Rare   Very   brief   Depth:   0.3	Occasional Brief Depth:	Occasional Brief Depth:	Occasional   Long   Depth:   0.5	Occasiona Long Depth:
532:			[				 			 		 
Sago	Occasional Long Depth:	Occasional Long Depth:	Occasional Long Depth:	Frequent Long Depth:	Frequent   Long   Depth:   0.5	Frequent   Brief   Depth:   0.5	Rare Very brief Depth:	Rare   Very   brief   Depth:   0.3	Occasional Brief Depth:	Occasional Brief Depth: 0.5	Occasional Long Depth:	Occasional Long Depth:

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January   	February	March 	April	May 	June	July   	August	September	October 	November	December
532:		 	[				 		 		 	 
Cathro	Occasional Long Depth:	Occasional Long Depth:	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent   Long   Depth:   0.5	Occasional Brief Depth: 0.5	Rare   Very   brief   Depth:   0.3	Rare   Very   brief   Depth:   0.3	Rare   Brief   Depth:   0.3	Occasional Brief Depth:	Occasional Long Depth:	Occasional Long Depth: 0.3
Zippel	  None     	  None   	  None     	Occasional Brief Depth: 0.3	Occasional Brief Depth:	Occasional   Very   brief   Depth:   0.3	  None   	None    -	Rare   Very   brief   Depth:   0.1	Occasional Very brief Depth:	Occasional Very brief Depth:	  None       
534:		 	i						İ		 	
Mooselake	Occasional Long Depth:	Occasional Long Depth:	Occasional   Long   Depth:   0.3	Frequent Long Depth: 0.3	Frequent   Long   Depth:   0.3	Occasional Brief Depth: 0.3	Rare   Very   brief   Depth:	Rare   Very   brief   Depth:	Rare   Very   brief   Depth:   0.2	Occasional Brief Depth:	Occasional   Long   Depth:   0.3	Occasional Long Depth: 0.3
Bullwinkle	  Occasional   Long   Depth:   0.3	  Occasional   Long   Depth:   0.3	  Occasional   Long   Depth:   0.3	Frequent Long Depth: 0.3	  Frequent   Long   Depth:   0.3	Occasional Brief Depth:	Rare   Very   brief   Depth:   0.2	Rare   Very   brief   Depth:	Rare   Very   brief   Depth:   0.2	  Occasional   Brief   Depth:   0.3	  Occasional   Long   Depth:   0.3	  Occasional   Long   Depth:   0.3
Dora	  Occasional   Long   Depth:   0.3	  Occasional   Long   Depth:   0.3	  Occasional   Long   Depth:   0.3	Frequent Long Depth:	  Frequent   Long   Depth:   0.3	Occasional Brief Depth:	Rare   Very   brief   Depth:   0.2	Rare   Very   brief   Depth:	  Rare   Very   brief   Depth:   0.2	  Occasional   Brief   Depth:   0.3	  Occasional   Long   Depth:   0.3	  Occasional   Long   Depth:   0.3
Tawas	  Occasional   Long   Depth:   0.3	  Occasional   Long   Depth:   0.3	  Occasional   Long   Depth:   0.3	Frequent Long Depth:	  Frequent   Long   Depth:   0.3	Occasional Brief Depth:	  Rare   Very   brief   Depth:   0.2	Rare   Very   brief   Depth:	  Rare   Very   brief   Depth:   0.2	  Occasional   Brief   Depth:   0.3	  Occasional   Long   Depth:   0.3	  Occasional   Long   Depth:   0.3
540: Seelyeville	  Occasional   Long   Depth:   0.3	  Occasional   Long   Depth:   0.3	  Cccasional   Long   Depth:   0.5	Frequent Long Depth:	    Frequent   Long   Depth:   0.5	Frequent Brief Depth:	  Occasional   Very   brief   Depth:	Coccasional Very brief Depth:	Coccasional Very brief Depth:	  Cccasional   Brief   Depth:   0.3	  Cccasional   Long   Depth:   0.3	  Cccasional   Long   Depth:   0.3

Map symbol and component name	January	February 	March	April 	May   	June	July	August	September	October 	November	December
		<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u>.                                    </u>	<u>.                                    </u>	i i	<u> </u>	1	<u> </u>	<u> </u>
540:		İ	İ	j	İ	j	j	İ	İ	İ	İ	j
Cathro	Occasional	Occasional	Occasional	Frequent	Frequent	Occasional	Rare	Rare	Rare	Occasional	Occasional	Occasiona
	Long	Long	Long	Long	Long	Brief	Very	Very	Brief	Brief	Long	Long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	Depth:	Depth:	Depth:	Depth:
	0.3	0.3	0.5	0.5	0.5	0.5	Depth:	Depth:	0.3	0.3	0.3	0.3
							0.3	0.3				
Dora	Oggagional	   0	0.0000000000000000000000000000000000000	Fromiont	  Frequent	  Occasional	  Paro	Rare	  Rare	000001	  Occasional	 
DOLA	Long	Long	Long	Long	Long	Brief	Very	Very	Brief	Brief	Long	Long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	very   brief	brief	Depth:	Depth:	Depth:	Depth:
	0.3	0.3	0.5	0.5	0.5	0.5	Depth:	Depth:	0.3	0.3	0.3	0.3
	0.3						0.3	0.3				
Markey	Occasional	  Occasional	  Occasional	  Frequent	  Frequent	  Occasional	  Rare	Rare	  Rare	Occasional	  Occasional	  Occasional
-	Long	Long	Long	Long	Long	Brief	Very	Very	Brief	Brief	Long	Long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	Depth:	Depth:	Depth:	Depth:
	0.3	0.3	0.5	0.5	0.5	0.5	Depth:	Depth:	0.3	0.3	0.3	0.3
			!	ļ	ļ	ļ	0.3	0.3	!	ļ.		<u> </u>
541:		 	 	 	 	 	 		 	 	 	 
Rifle	Occasional	Occasional	Occasional	Frequent	Frequent	Frequent	Occasional	Occasional	Occasional	Occasional	Occasional	Occasional
	Long	Long	Long	Long	Long	Brief	Very	Very	Very	Brief	Long	Long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	brief	Depth:	Depth:	Depth:
	0.3	0.3	0.5	0.5	0.5	0.5	Depth:	Depth:	Depth:	0.3	0.3	0.3
							0.3	0.3	0.3			
Tacoosh	Occasional	  Occasional	Occasional	Frequent	Frequent	  Occasional	Rare	Rare	Rare	Occasional	  Occasional	  Occasional
	Long	Long	Long	Long	Long	Brief	Very	Very	Brief	Brief	Long	Long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	Depth:	Depth:	Depth:	Depth:
	0.3	0.3	0.5	0.5	0.5	0.5	Depth:	Depth:	0.3	0.3	0.3	0.3
							0.3	0.3				
543:		 	 	 	 	 	 	 	 	 	 	 
Markey	Occasional	Occasional	Occasional	Frequent	Frequent	Occasional	Rare	Rare	Rare	Occasional	Occasional	Occasional
	Long	Long	Long	Long	Long	Brief	Very	Very	Brief	Brief	Long	Long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	Depth:	Depth:	Depth:	Depth:
	0.3	0.3	0.5	0.5	0.5	0.5	Depth:	Depth:	0.3	0.3	0.3	0.3
		 	 	1	 	 	0.3	0.3	 	1	 	 
Cormant	None	  None	  None	Occasional	  Occasional	  Rare	  None	None	  None	  Rare	  None	  None
				Brief	Very	Very				Very		
				Depth:	brief	brief				brief		
				0.3	Depth:	Depth:				Depth:		
			I	I	0.3	0.2			I	0.2	I	I

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Table 28 Ponding Frequency, Duration, and DepthContinued	Table	28.	Ponding	Frequency,	Duration,	and	DepthContinued
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Map symbol and component name	January   	February   	March   	April 	May   	June   	July   	August   	September   	October   	November   	December
543:		 	 			 	 	 				 
Seelyeville	Occasional Long Depth:	Occasional Long Depth:	Occasional Long Depth:	Frequent Long Depth:	Frequent   Long   Depth:   0.5	Frequent   Brief   Depth:   0.5	Occasional Very brief Depth:	Occasional Very brief Depth:	Occasional Very brief Depth:	Occasional Brief Depth:	Occasional Long Depth:	Occasional   Long   Depth:   0.3
544:	 										 	 
Cathro	Occasional Long Depth:	Occasional   Long   Depth:   0.3	Occasional Long Depth:	Frequent Long Depth:	Frequent   Long   Depth:   0.5	Occasional Brief Depth:	Rare   Very   brief   Depth:   0.3	Rare   Very   brief   Depth:   0.3	Rare   Brief   Depth:   0.3	Occasional Brief Depth:	Occasional   Long   Depth:   0.3	Occasional Long Depth:
Percy, very	 										 	
cobbly	None     	None       	None       	Occasional Brief Depth:	Occasional   Brief   Depth:   0.3	Occasional   Very   brief   Depth:   0.3	None       	None     	Rare   Very   brief   Depth:   0.3	Rare   Very   brief   Depth:   0.3	Occasional Brief Depth:	None       
Grygla	  None   	  None     	  None     	Occasional Brief Depth:	Occasional Very brief Depth:	Rare   Very   brief   Depth:   0.1	  None     	  None     	  None   	Rare   Very   brief   Depth:   0.1	Rare   Very   brief   Depth:   0.1	  None     
Seelyeville	  Occasional	  Occasional	Occasional	  Frequent	Frequent	Frequent	Occasional	Occasional	Occasional	Occasional	  Occasional	  Occasional
	Long Depth: 0.3	Long Depth: 0.3	Long Depth: 0.5	Long Depth: 0.5	Long Depth: 0.5	Brief   Depth:   0.5	Very   brief   Depth:   0.3	Very   brief   Depth:   0.3	Very   brief   Depth:   0.3	Brief   Depth:   0.3	Long Depth: 0.3	Long Depth: 0.3
546:	 							[				
Lupton	Occasional   Long   Depth:   0.3	Occasional Long Depth:	Occasional   Long   Depth:   0.3	Frequent Long Depth: 0.3	Frequent   Long   Depth:   0.3	Occasional Brief Depth:	Rare   Very   brief   Depth:   0.2	Rare   Very   brief   Depth:   0.2	Rare   Very   brief   Depth:   0.2	Occasional Brief Depth:	Occasional   Long   Depth:   0.3	Occasional Long Depth:
Bullwinkle	Occasional Long Depth:	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Frequent   Long   Depth:   0.3	Frequent   Long   Depth:   0.3	Occasional Brief Depth:	Rare   Very   brief   Depth:   0.2	Rare   Very   brief   Depth:   0.2	Rare   Very   brief   Depth:   0.2	Occasional Brief Depth:	Occasional Long Depth:	Occasional Long Depth: 0.3

Lo	casional	 										
Dora  Occ		_						j	j	İ		
Dora  Occ		. !				!		!	İ			
Lo:								1_	1_			
De				_	Frequent	Occasional		Rare	Rare	Occasional		
		Long	Long	Long	Long	Brief	Very	Very	Very	Brief	Long	Long
0.	epth:	Depth: 0.3	Depth: 0.3	Depth:	Depth:	Depth:	brief Depth:	brief   Depth:	brief Depth:	Depth:	Depth:	Depth:
	.3	0.3	0.3	0.3	0.3	U.3 	Depth:   0.2	Depth:	Depth:	U.3 	0.3	0.3
j	į	į				İ		İ	İ	İ		İ
Tawas  Occ	casional			Frequent	Frequent	Occasional		Rare	Rare	Occasional		
	ong	Long	Long	Long	Long	Brief	Very	Very	Very	Brief	Long	Long
	epth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	brief	Depth:	Depth:	Depth:
0.	.3	0.3	0.3	0.3	0.3	0.3	Depth:	Depth:	Depth:	0.3	0.3	0.3
						 	0.2	0.2	0.2	 		
547:	i											
Deerwood Occ	casional	Occasional	Occasional	Frequent	Frequent	Frequent	Rare	Rare	Occasional	Occasional	Occasional	Occasional
Lo	ong	Long	Long	Long	Long	Brief	Very	Very	Brief	Brief	Long	Long
	epth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	Depth:	Depth:	Depth:	Depth:
0.	.5	0.5	0.5	0.5	0.5	0.5	Depth:	Depth:	0.3	0.5	0.5	0.5
						 	0.3	0.3		 		
Markey Occ	casional	Occasional	Occasional	Frequent	Frequent	Occasional	Rare	Rare	Rare	Occasional	Occasional	Occasional
Lo	ong	Long	Long	Long	Long	Brief	Very	Very	Brief	Brief	Long	Long
	epth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	Depth:	Depth:	Depth:	Depth:
0.	.3	0.3	0.5	0.5	0.5	0.5	Depth:	Depth:	0.3	0.3	0.3	0.3
	ļ					l I	0.3	0.3		l I		 
Rosewood Non	ne	None	None	Occasional	  Occasional	Rare	None	None	None	Rare	None	None
į	ĺ	ĺ		Brief	Very	Very		į	İ	Very		ĺ
				Depth:	brief	brief				brief		
				0.3	Depth:	Depth:				Depth:		
	ļ	ļ			0.3	0.2				0.2		
Syrene Non	ne	None	None	Occasional	Rare	  Rare	None	None	None	  None	None	None
i	i	i		Very	Very	Very	İ	i	i	İ		i
i	i	į		brief	brief	brief	İ	i	i	İ		i
j	i	į		Depth:	Depth:	Depth:	İ	j	İ	İ		į
İ	į	j		0.3	0.3	0.1		İ	İ	ĺ		ĺ
	!											
550:   Dora  Occ	  1	00000:	0.000.00	Emagni t	  Emagnitude	000000	   Dama	Rare	Rare	  Occasional	0.00000	04444
				_	Frequent	Occasional Brief		1	Rare   Brief	Occasional   Brief		
· ·	ong   epth:	Long Depth:	Long Depth:	Long Depth:	Long Depth:	Brier   Depth:	Very   brief	Very   brief	Depth:	Briei   Depth:	Long Depth:	Long Depth:
De	- '	0.3	Depth:	Depth:	Depth:   0.5	Depth:   0.5	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:
0.		0.5	0.5	0.5	0.5	0.5	Depth:	Depth:	0.3	0.5	0.3	0.3
		I		1		I						

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February   	March 	April   	May   	June   	July   	August	September   	October   	November   	December
550:		 		 	 	 	 	 	 	 	 	 
Boash	None	  None     	None     	Occasional Brief Depth:	Occasional Brief Depth: 0.3	Occasional Very brief Depth:	Rare   Very   brief   Depth:   0.2	Rare   Very   brief   Depth:   0.2	Rare   Very   brief   Depth:   0.2	Occasional Very brief Depth:	Occasional Brief Depth:	None     
				<u>.</u>		İ						
Seelyeville	Long Depth: 0.3	Occasional   Long   Depth:   0.3 	Occasional   Long   Depth:   0.5	Frequent   Long   Depth:   0.5	Frequent   Long   Depth:   0.5	Frequent   Brief   Depth:   0.5	Occasional   Very   brief   Depth:   0.3	Occasional Very brief Depth:	Occasional Very brief Depth:	Occasional   Brief   Depth:   0.3	Occasional   Long   Depth:   0.3	Occasiona   Long   Depth:   0.3 
Woodslake		1	1		Frequent	1	Occasional					
	Long Depth: 0.5	Long   Depth:   0.5	Long Depth:	Long Depth: 0.5	Long   Depth:   0.5	Long   Depth:   0.5	Brief   Depth:   0.5	Brief   Depth:   0.5	Brief Depth: 0.5	Brief   Depth:   0.5	Long   Depth:   0.5	Long   Depth:   0.5
561:		 		 	 	 	 	 	 	 	 	 
Bullwinkle	Occasional	Occasional	Occasional	Frequent	Frequent	Occasional	Rare	Rare	Rare	Occasional	Occasional	Occasiona
	Long	Long	Long	Long	Long	Brief	Very	Very	Very	Brief	Long	Long
	Depth: 0.3	Depth:   0.3 	Depth:   0.3 	Depth:   0.3 	Depth:   0.3 	Depth:   0.3 	brief   Depth:   0.2	brief   Depth:   0.2	brief   Depth:   0.2	Depth:   0.3 	Depth:   0.3 	Depth:   0.3 
Lupton	Occasional	  Occasional	Occasional	Frequent	Frequent	  Occasional	Rare	Rare	Rare	Occasional	Occasional	  Occasiona
	Long	Long	Long	Long	Long	Brief	Very	Very	Very	Brief	Long	Long
	Depth:	Depth:	Depth:   0.3	Depth:	Depth:   0.3	Depth:	brief   Depth:   0.2	brief Depth:	brief Depth:	Depth:	Depth:	Depth:
Northwood,		 		 	 	 	 	 			 	 
wooded	Occasional	Occasional	Occasional	Frequent	Frequent	Occasional	Rare	Rare	Rare	Occasional	Occasional	Occasiona
j	Long	Long	Long	Long	Long	Brief	Very	Very	Very	Brief	Long	Long
j	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	brief	Depth:	Depth:	Depth:
	0.3	0.3	0.3	0.3	0.3	0.3	Depth:	Depth:	Depth: 0.2	0.3	0.3	0.3
Chilgren	None	  None     	  None     	  Occasional   Brief   Depth:   0.3	  Occasional   Brief   Depth:   0.3	Cocasional Very brief Depth:	  None     	  None   	Rare Very brief Depth:	  Rare   Very   brief   Depth:   0.3	  Occasional   Brief   Depth:   0.3	  None   

None

None

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Map symbol and component name	January	   February   	   March 	April	   May 	   June 	   July 	August	  September 	   October   	   November   	   December   
563:		 	 		 	 	 			 	 	 
Northwood	Occasional	Occasional	Occasional	Frequent	Frequent	Frequent	Rare	Rare	Occasional	Occasional	Occasional	Occasiona
	Long	Long	Long	Long	Long	Brief	Very	Very	Brief	Brief	Long	Long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	Depth:	Depth:	Depth:	Depth:
	0.5	0.5	0.5	0.5	0.5	0.5	Depth:	Depth:	0.3	0.5	0.5	0.5
							0.3	0.3				
Grygla	None	  None	  None	  Occasional	  Occasional	  Rare	  None	None	None	  Rare	  Rare	  None
		İ	İ	Brief	Very	Very	İ	j	i	Very	Very	İ
		i	İ	Depth:	brief	brief	i	i	i	brief	brief	i
		i	İ	0.3	Depth:	Depth:	i	i	i	Depth:	Depth:	i
		į			0.3	0.1	į	į	į	0.1	0.1	į
Berner	Occasional	  Occasional	  Occasional	Frequent	  Frequent	  Occasional	  Rare	Rare	Rare	  Occasional	  Occasional	  Occasiona
	Long	Long	Long	Long	Long	Brief	Very	Very	Brief	Brief	Long	Long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	Depth:	Depth:	Depth:	Depth:
	0.3	0.3	0.5	0.5	0.5	0.5	Depth:	Depth:	0.3	0.3	0.3	0.3
		į	į	į	İ	į	0.3	0.3	į	į	į	į
Strandquist	None	  None	  None	  Occasional	  Occasional	  Rare	  None	None	None	  Rare	  None	  None
				Brief	Very	Very				Very		
				Depth:	brief	brief				brief		
				0.3	Depth:	Depth:				Depth:		
					0.3	0.3				0.3		
565:			 		 	 					 	
Eckvoll	None	None	None	None	None	None	None	None	None	None	None	None
Chilgren	None	None	None		Occasional	Occasional	None	None	Rare	Rare	Occasional	None
				Brief	Brief	Very			Very	Very	Brief	
				Depth:	Depth:	brief			brief	brief	Depth:	
				0.3	0.3	Depth:			Depth:	Depth:	0.3	
					 	0.3			0.3	0.3		
Grygla	None	None	  None	Occasional	  Occasional	  Rare	None	None	None	  Rare	  Rare	None
				Brief	Very	Very				Very	Very	
				Depth:	brief	brief				brief	brief	
				0.3	Depth:	Depth:				Depth:	Depth:	
		1	I	1	0.3	0.1	I	1	1	0.1	0.1	1

Hiwood----- None

None

None

None

None

None

None

None

None

None

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January   	February   	March   	April	May   	June   	July   	August	September 	October   	November   	December
568: Zippel	    None   	    None     	    None     	Occasional Brief Depth:	  Occasional   Brief   Depth:   0.3	  Occasional  Very  brief  Depth:  0.3	    None     	    None     	  Rare   Very   brief   Depth:   0.1	  Occasional   Very   brief   Depth:   0.1	  Occasional   Very   brief   Depth:   0.1	    None     
Augsburg, depressional	  Cccasional   Long   Depth:   0.5	  Cccasional   Long   Depth:   0.5	  Occasional   Long   Depth:   0.5	Frequent   Long   Depth:   0.5	  Frequent   Long   Depth:   0.5	  Occasional   Brief   Depth:   0.5	  Rare   Very   brief   Depth:   0.3	  Rare   Very   brief   Depth:   0.3	Occasional Brief Depth:	  Cccasional   Brief   Depth:   0.3	  Occasional   Long   Depth:   0.5	  Occasional   Long   Depth:   0.5
Sago	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent   Long   Depth:   0.5	  Frequent   Long   Depth:   0.5	  Frequent   Brief   Depth:   0.5	Rare   Very   brief   Depth:   0.3	  Rare   Very   brief   Depth:   0.3	Occasional Brief Depth:	Occasional Brief Depth:	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
Skime	None	None	None	None	None	None	None	None	None	None	None	None
569: Wabanica	  None     	  None       	  None     	Occasional Brief Depth:	  Occasional   Brief   Depth:   0.3	  Occasional   Very   brief   Depth:   0.3	  Rare   Very   brief   Depth:   0.3	  None     	Rare   Very   brief   Depth:   0.3	  Cccasional   Very   brief   Depth:   0.3	  Occasional   Brief   Depth:   0.3	  None     
Warroad	  None     	  None       	  None     	Occasional Brief Depth:	Occasional Very brief Depth:	Rare   Very   brief   Depth:   0.1	  None     	  None     	None	   Rare   Very   brief   Depth:   0.1	  Rare   Very   brief   Depth:   0.1	  None       
Sax	Occasional Long Depth:	Occasional Long Depth:	Occasional Long Depth: 0.5	Frequent Long Depth:	Frequent   Long   Depth:   0.5	Frequent   Brief   Depth:   0.5	Occasional Very brief Depth:	Rare   Very   brief   Depth:   0.3	Occasional Brief Depth:	Occasional Brief Depth:	Occasional Long Depth:	Occasional Long Depth: 0.5
Grano	  None       	  None       	  None       	Occasional Brief Depth:	  Occasional   Brief   Depth:   0.3	  Occasional   Very   brief   Depth:   0.3	  Rare   Very   brief   Depth:   0.2	  Rare   Very   brief   Depth:   0.2	Rare  Very  brief  Depth:  0.2	   Occasional   Very   brief   Depth:   0.2	  Occasional   Brief   Depth:   0.3	  None         

		1	1	1			1	1	1	1	1	
Map symbol and component name	   January   	   February   	   March 	   April 	   May 	   June 	   July 	   August   	  September   	   October   	   November   	   December   
	l	1	1	1	<u> </u>	<u> </u>	1	1	1	<u> </u>	1	<u> </u> 
569: Enstrom	    None	    None	    None	    None	    None	None	    None	    None	    None	    None	    None	    None
570:	l I	 	 	l I	 		 		}	 	 	l I
Faunce	  None 	  None	  None 	  None	  None	None	  None	  None	  None	  None	  None	  None 
Clearriver	  None	  None	  None	  None	  None	None	  None	  None	  None	  None	  None	  None
Zimmerman	  None	  None	  None	  None	  None	  None	  None	  None	  None	  None	  None	  None
Meehan	  None	  None	  None	  None	  None	None	  None	  None	  None	  None	  None	  None
Pits, gravel.	   		   	   	   					   	 	   
581: Percy	    None	    None	    None		    Occasional		    None	    None	    Rare	    Rare	    Occasional	    None
	      -	     	     	Brief   Depth:   0.3	Brief   Depth:   0.3	Very brief Depth: 0.3	     	     	Very   brief   Depth:   0.3	Very   brief   Depth:   0.3	Brief   Depth:   0.3	   
Haug	  Occasional	  Occasional	  Occasional	  Frequent	  Frequent	Frequent	  Rare	  Rare		  Occasional	  Occasional	  Occasional
	Long	Long	Long	Long	Long	Brief	Very	Very	Brief	Brief	Long	Long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	Depth:	Depth:	Depth:	Depth:
	0.5	0.5	0.5	0.5 	0.5	0.5	Depth:	Depth:	0.3	0.5 	0.5	0.5
Boash	  None       	  None       	  None       	Occasional Brief Depth:	Occasional Brief Depth:	Occasional   Very   brief   Depth:   0.3	Rare   Very   brief   Depth:   0.2	Rare   Very   brief   Depth:   0.2	Rare   Very   brief   Depth:   0.2	Occasional Very brief Depth:	  Occasional   Brief   Depth:   0.3	  None     
Skagen	  None	  None	  None	  None	  None	None	  None	  None	  None	  None	  None	  None
582:	I I	I I	I I	I I	 		I I	I I	I I	 	I I	 
Roliss	  None     	  None       	  None     	Occasional Brief Depth:	Occasional Brief Depth:	Occasional   Very   brief   Depth:   0.3	  None       	  None       	Rare   Very   brief   Depth:   0.3	Rare   Very   brief   Depth:   0.3	Occasional Brief Depth:	  None     

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February   	March 	April 	   May 	   June 	   July 	August	  September 	   October   	November 	   December   
582:		 		 	 	 	  -			 	 	 
Roliss,		 		 		I I	l I	-	1	 	 	 
depressional	Occasional	Occasional	Occasional	Frequent	Frequent	Occasional	  Pare	Rare	Rare	Occasional	Occasional	  Occasional
deprebbional	Long	Long	Long	Long	Long	Brief	Very	Verv	Brief	Brief	Long	Long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	Depth:	Depth:	Depth:	Depth:
	0.5	0.5	0.5	0.5	0.5	0.5	Depth:	Depth:	0.3	0.3	0.5	0.5
							0.3	0.3				
Boash	None	  None	None	  Occasional	  Occasional	  Occasional	  Rare	Rare	Rare	  Occasional	  Occasional	  None
				Brief	Brief	Very	Very	Very	Very	Very	Brief	
				Depth:	Depth:	brief	brief	brief	brief	brief	Depth:	
				0.3	0.3	Depth:	Depth:	Depth:	Depth:	Depth:	0.3	
		 		 	 	0.3	0.2	0.2	0.2	0.2	 	 
Haug					Frequent	Frequent	Rare	Rare		Occasional		
	Long	Long	Long	Long	Long	Brief	Very	Very	Brief	Brief	Long	Long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	Depth:	Depth:	Depth:	Depth:
	0.5	0.5	0.5	0.5	0.5	0.5	Depth:	Depth:	0.3	0.5	0.5	0.5 
583:												
Nereson	None	None	None	None	None	None	None	None	None	None	None	None
Percy	None	None	None	Occasional	Occasional	Occasional	None	None	Rare	Rare	Occasional	None
				Brief	Brief	Very			Very	Very	Brief	
				Depth:	Depth:	brief			brief	brief	Depth:	
		!		0.3	0.3	Depth:			Depth:	Depth:	0.3	
		 		 		0.3	 		0.3	0.3	 	 
Pelan	None	None	None	None	None	None	None	None	None	None	None	None
Foxhome	None	  None 	None	  None 	  None 	  None 	  None 	None	None	  None 	  None 	  None 
627:		İ				İ		İ				
Tawas					Frequent	Occasional		Rare	Rare	1	Occasional	
	Long	Long	Long	Long	Long	Brief	Very	Very	Very	Brief	Long	Long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	brief	Depth:	Depth:	Depth:
	0.3	0.3	0.3	0.3 	0.3	0.3 	Depth:	Depth:	Depth:	0.3	0.3 	0.3
Leafriver	Occasional	Occasional	Occasional	Frequent	Frequent	Occasional	  Rare	Rare	Rare	Occasional	Occasional	Occasional
	Long	Long	Long	Long	Long	Brief	Very	Very	Very	Brief	Long	Long
	-	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	brief	Depth:	Depth:	Depth:
I	Deptn:											
	Depth: 0.3	Depth:	Depth:	0.3	0.3	0.3	Depth:	Depth:	Depth:	0.3	0.3	0.3

Map symbol and component name	January   	February   	March   	April   	May   	June   	July   	August	September   	October   	November   	December
627:	 	 	 	 	 	 	 	 		 	 	
Lupton	Occasional Long Depth:	Occasional Long Depth:	Occasional Long Depth:	Frequent   Long   Depth:   0.3	Frequent   Long   Depth:   0.3	Occasional Brief Depth:	Rare   Very   brief   Depth:   0.2	  Rare   Very   brief   Depth:   0.2	Rare   Very   brief   Depth:   0.2	Occasional Brief Depth:	Occasional Long Depth:	Occasional Long Depth: 0.3
Cormant	  None   	  None   	  None   	Occasional Brief Depth:	Occasional Very brief Depth:	Rare   Very   brief   Depth:   0.2	  None     	  None     	None	Rare   Very   brief   Depth:   0.2	  None   	  None     
630:	 	 										
Wildwood	Occasional   Long   Depth:   0.5	Occasional Long Depth:	Occasional   Long   Depth:   0.5	Frequent   Long   Depth:   0.5	Frequent Long Depth: 0.5	Frequent   Brief   Depth:   0.5	Occasional   Very   brief   Depth:   0.3	Rare   Very   brief   Depth:   0.3	Occasional   Brief   Depth:   0.3	Occasional Brief Depth:	Occasional Long Depth:	Occasional Long Depth: 0.5
Boash	  None   	  None   	  None   	Occasional Brief Depth:	Occasional Brief Depth:	Occasional Very brief Depth:	Rare   Very   brief   Depth:   0.2	  Rare   Very   brief   Depth:   0.2	Rare   Very   brief   Depth:   0.2	Occasional Very brief Depth:	Occasional Brief Depth:	  None     
Dora	Occasional Long Depth:	Occasional Long Depth:	Occasional Long Depth:	Frequent   Long   Depth:   0.5	Frequent   Long   Depth:   0.5	Occasional Brief Depth:	Rare   Very   brief   Depth:   0.3	  Rare   Very   brief   Depth:   0.3	Rare   Brief   Depth:   0.3	Occasional Brief Depth:	Occasional Long Depth:	  Occasional   Long   Depth:   0.3
Espelie	  None     	  None     	  None     	Occasional Brief Depth:	Occasional Brief Depth:	Occasional Very brief Depth:	  None     	  None       	Rare   Very   brief   Depth:	   Rare   Very   brief   Depth:   0.1	  Rare   Very   brief   Depth:   0.1	   None       
643:								İ	į	İ		İ
Huot	None	None	None	None	None	None	None	None	None	None	None	None
Thiefriver	  None   	  None   	  None   	Occasional Brief Depth:	Occasional Brief Depth:	Occasional Very brief Depth:	  None     	  None     	Rare   Very   brief   Depth:   0.1	  Rare   Very   brief   Depth:   0.1	  Rare   Very   brief   Depth:   0.1	  None     

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January   	February 	March 	April 	May 	June	July	August	September	October 	November 	December
643: Redby	    None 	    None 	    None 	    None 	    None 	    None 	    None 	    None 	    None 	    None 	    None 	    None 
644: Boash	  None   	  None   	  None   	Occasional Brief Depth:	Occasional Brief Depth:	Very brief Depth:	Very brief Depth:	  Rare   Very   brief   Depth:		Very brief Depth:	Occasional Brief Depth:	  None   
Percy	  None   	  None   	  None   	Occasional Brief Depth:	  Occasional   Brief   Depth:   0.3	0.3    Occasional   Very   brief   Depth:   0.3	0.2    None   	0.2    None   	0.2    Rare   Very   brief   Depth:   0.3	0.2    Rare   Very   brief   Depth:   0.3	  Occasional   Brief   Depth:   0.3	    None     
Woodslake	  Occasional   Long   Depth:   0.5	  Occasional   Long   Depth:   0.5	  Occasional   Long   Depth:   0.5	  Frequent   Long   Depth:   0.5	  Frequent   Long   Depth:   0.5	  Occasional   Long   Depth:   0.5	  Occasional   Brief   Depth:   0.5	  Occasional   Brief   Depth:   0.5	  Occasional   Brief   Depth:   0.5	  Occasional   Brief   Depth:   0.5	  Occasional   Long   Depth:   0.5	  Occasional   Long   Depth:   0.5
Strandquist	  None     	  None     	  None     	  Occasional   Brief   Depth:   0.3	  Occasional   Very   brief   Depth:   0.3	  Rare   Very   brief   Depth:   0.3	  None     	  None     	  None     	  Rare   Very   brief   Depth:   0.3	  None     	  None     
645: Espelie	  None     	  None     	  None   	Occasional Brief Depth:	  Occasional   Brief   Depth:   0.3	Occasional Very brief Depth:	  None   	  None   	  Rare   Very   brief   Depth:   0.1	  Rare   Very   brief   Depth:   0.1	  Rare   Very   brief   Depth:   0.1	  None     
Grano	  None       	  None       	  None     	  Occasional   Brief   Depth:   0.3	  Occasional   Brief   Depth:   0.3	  Occasional   Very   brief   Depth:   0.3	  Rare   Very   brief   Depth:   0.2	  Rare   Very   brief   Depth:   0.2	Rare   Very   brief   Depth:   0.2	  Occasional   Very   brief   Depth:   0.2	  Occasional   Brief   Depth:   0.3	  None     
Hilaire	None	  None	None	  None	  None	  None	  None	  None	None	  None	  None	  None
Wildwood	  Occasional   Long   Depth:   0.5	  Occasional   Long   Depth:   0.5	  Occasional   Long   Depth:   0.5	  Frequent   Long   Depth:   0.5	  Frequent   Long   Depth:   0.5	  Frequent   Brief   Depth:   0.5	  Occasional   Very   brief   Depth:   0.3	  Rare   Very   brief   Depth:   0.3	  Occasional   Brief   Depth:   0.3	  Occasional   Brief   Depth:   0.5	  Occasional   Long   Depth:   0.5	  Occasional   Long   Depth:   0.5

											I	
Map symbol and component name	   January   	   February   	   March 	   April 	   May 	   June 	   July 	   August 	  September 	   October 	November   	   December   
	<u> </u>	1	<u> </u>	l	<u> </u>	<u>                                     </u>	<u> </u>	<u> </u>	1	1	<u> </u>	l
651:		İ	İ		İ	İ	 			İ	i	İ
Thiefriver	None     	None       	None       	Occasional Brief Depth:	Occasional   Brief   Depth:   0.3	Occasional Very brief Depth:	None       	None       	Rare   Very   brief   Depth:   0.1	Rare   Very   brief   Depth:   0.1	Rare   Very   brief   Depth:   0.1	None         
Grano	  None     	  None       	  None     	Occasional Brief Depth:	Occasional Brief Depth:	Occasional Very brief Depth:	Rare   Very   brief   Depth:   0.2	Rare   Very   brief   Depth:   0.2	Rare   Very   brief   Depth:   0.2	Occasional Very brief Depth:	Occasional Brief Depth:	  None       
Huot	None	None	None	None	None	None	None	None	None	None	None	None
Wildwood	  Occasional   Long   Depth:   0.5	  Occasional   Long   Depth:   0.5	  Occasional   Long   Depth:   0.5	  Frequent   Long   Depth:   0.5	  Frequent   Long   Depth:   0.5	  Frequent   Brief   Depth:   0.5	Occasional Very brief Depth:	  Rare   Very   brief   Depth:   0.3	Occasional Brief Depth: 0.3	  Occasional   Brief   Depth:   0.5	  Occasional   Long   Depth:   0.5	  Occasiona   Long   Depth:   0.5
708:	 	 	 	 	 	 	 	 		 	 	 
Rushlake	None	None	None	None	None	None	None	None	None	None	None	None
Corliss	  None 	  None 	  None 	  None 	  None 	  None 	  None 	  None 	  None	  None 	  None 	  None 
Redby	None	None	None	None	None	None	None	None	None	None	None	None
Hangaard	  None   	  None     	  None     	  Occasional   Very   brief   Depth:   0.3	  Rare   Very   brief   Depth:   0.3	  Rare   Very   brief   Depth:   0.1	  None   	  None   	None	  None     	  None     	  None     
Pits, gravel.	 		 	 		 	 	 				 
		ļ	!		ļ		ļ				!	
712: Rosewood	  None   	  None     	  None     	  Occasional   Brief   Depth:   0.3	  Occasional   Very   brief   Depth:   0.3	  Rare   Very   brief   Depth:   0.2	  None   	  None     	None	  Rare   Very   brief   Depth:   0.2	  None     	  None     

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and	January	February	March	April	May	June	July	August	September	October	November	December
component name		İ	İ		i	i	İ	İ				
		l			İ	İ	l					<u> </u>
712:		ĺ	ĺ		İ	ĺ	ĺ	ĺ				
Deerwood	Occasional	Occasional	Occasional	Frequent	Frequent	Frequent	Rare	Rare	Occasional	Occasional	Occasional	Occasional
	Long	Long	Long	Long	Long	Brief	Very	Very	Brief	Brief	Long	Long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	Depth:	Depth:	Depth:	Depth:
	0.5	0.5	0.5	0.5	0.5	0.5	Depth:	Depth:	0.3	0.5	0.5	0.5
							0.3	0.3				
Hangaard	None	  None	None	  Occasional	  Paro	Rare	  None	None	None	None	None	  None
nangaard	None	None	None	Very	Very	Very	None	None	None	None	None	None
		l I	I I	brief	brief	brief	l I	l I	1	 		
		İ	İ	Depth:	Depth:	Depth:	İ	İ				
		İ	İ	0.3	0.3	0.1	İ	İ				
Ulen	None	None	None	None	None	None	None	None	None	None	None	None
721B:		l I	l I	 	 	l I	l I	l I	 	 		 
Corliss	None	None	None	None	None	None	  None	None	None	None	None	None
Rushlake	None	None	None	None	None	None	None	None	None	None	None	None
_		!	!		ļ	!	!	!				
Hangaard	None	None	None	Occasional	1	Rare	None	None	None	None	None	None
				Very	Very	Very						
		 	 	brief Depth:	brief   Depth:	brief   Depth:	 	l I				
		l I	l I	Depth:   0.3	Depth:	Depth:	l I	l I	l I	 	l	l I
		 	 	0.3	0.3	0.1	 	 	 	 		<u> </u> 
Pits, gravel.												
733:		 	 		 	 	 	 	 			
Berner	Occasional	Occasional	Occasional	Frequent	Frequent	Occasional	Rare	Rare	Rare	Occasional	Occasional	Occasional
	Long	Long	Long	Long	Long	Brief	Very	Very	Brief	Brief	Long	Long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	Depth:	Depth:	Depth:	Depth:
	0.3	0.3	0.5	0.5	0.5	0.5	Depth:	Depth:	0.3	0.3	0.3	0.3
					ļ	ļ	0.3	0.3				
Grygla	None	  None	None		  Occasional	Paro	  None	None	None	Rare	Rare	None
Giygia	None	None	None	Brief	Very	Very	None	None	None	Very	Very	None
		I I	l I	Depth:	brief	brief	I I	l I	 	brief	brief	l I
		İ	İ	0.3	Depth:	Depth:	i I	İ	İ	Depth:	Depth:	
		İ	İ		0.3	0.1	İ	İ	İ	0.1	0.1	
			[		[				Į į			
Seelyeville				_	Frequent	Frequent	1	1	Occasional			
	Long	Long	Long	Long	Long	Brief	Very	Very	Very	Brief	Long	Long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	brief	Depth:	Depth:	Depth:
	0.3	0.3	0.5	0.5	0.5	0.5	Depth:	Depth:	Depth:	0.3	0.3	0.3

Map symbol and component name	January   	February   	March	April 	May   	June	July   	August   	September	October	November	December
737:	 	 		 	 			 	 	 		 
Mahkonce	None	None	None	None	None	None	None	None	None	None	None	None
Auganaush	  None     	  None     	None   	Occasional Brief Depth:	Occasional Brief Depth:	Occasional   Very   brief   Depth:   0.3	   Rare   Very   brief   Depth:   0.1	Rare   Very   brief   Depth:   0.1	Rare   Very   brief   Depth:   0.1	Occasional Very brief Depth:	Occasional Brief Depth:	  None       
Eckvoll	None	None	None	None	None	None	None	None	None	None	None	None
755:					 					 		
Woodslake	Occasional   Long   Depth:   0.5	Occasional   Long   Depth:   0.5	Occasional Long Depth:	Frequent   Long   Depth:   0.5	Frequent   Long   Depth:   0.5	Occasional   Long   Depth:   0.5	Occasional   Brief   Depth:   0.5	Occasional Brief Depth: 0.5	Occasional Brief Depth: 0.5	Occasional Brief Depth:	Occasional   Long   Depth:   0.5	Occasional   Long   Depth:   0.5
Boash	None       	None       	None	Occasional Brief Depth:	Occasional Brief Depth:	Occasional Very brief Depth:	Rare   Very   brief   Depth:   0.2	Rare   Very   brief   Depth:   0.2	Rare   Very   brief   Depth:   0.2	Occasional Very brief Depth:	Occasional Brief Depth:	None       
Wildwood	Occasional Long Depth:	Occasional Long Depth:	Occasional Long Depth:	Frequent   Long   Depth:   0.5	Frequent   Long   Depth:   0.5	Frequent Brief Depth: 0.5	Occasional Very brief Depth:	Rare   Very   brief   Depth:   0.3	Occasional Brief Depth:	Occasional Brief Depth:	Occasional Long Depth:	Occasional Long Depth:
Dora	  Occasional   Long   Depth:   0.3	   Occasional   Long   Depth:   0.3	Occasional Long Depth:	  Frequent   Long   Depth:   0.5	  Frequent   Long   Depth:   0.5	Occasional Brief Depth:	Rare   Very   brief   Depth:   0.3	Rare   Very   brief   Depth:   0.3	  Rare   Brief   Depth:   0.3	Occasional Brief Depth:	Occasional   Long   Depth:   0.3	Cccasional Long Depth:
767: Auganaush	    None     	    None     	  None   	  Cccasional   Brief   Depth:   0.3	  Occasional   Brief   Depth:   0.3	Occasional Very brief Depth:	  Rare   Very   brief   Depth:   0.1	  Rare   Very   brief   Depth:   0.1	  Rare   Very   brief   Depth:   0.1	    Occasional   Very   brief   Depth:   0.1	    Occasional   Brief   Depth:   0.3	    None     

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	   February   	March 	April 	   May 	   June 	July	   August 	  September   	   October   	   November   	   December   
767: Mustinka	None	  None   	  None   	Occasional Brief Depth:	Occasional Brief Depth:	Occasional Very brief Depth:	Rare Very brief Depth: 0.2	  Rare   Very   brief   Depth:   0.2	  Rare   Very   brief   Depth:   0.2	Occasional Very brief Depth:	  Occasional   Brief   Depth:   0.3	    None   
Wildwood	Occasional Long Depth:	  Occasional   Long   Depth:   0.5	  Occasional   Long   Depth:   0.5	  Frequent   Long   Depth:   0.5	  Frequent   Long   Depth:   0.5	  Frequent   Brief   Depth:   0.5	Occasional Very brief Depth:	  Rare   Very   brief   Depth:   0.3	  Occasional   Brief   Depth:   0.3	  Occasional   Brief   Depth:   0.5	  Occasional   Long   Depth:   0.5	  Occasional   Long   Depth:   0.5
Mahkonce	None	  None	None	None	None	  None	None	  None	None	None	  None	  None
794: Clearriver	None	    None	    None	    None	    None	    None	None	    None	    None	    None	    None	    None
Hiwood	None	  None	None	None	  None	  None	None	  None	None	  None	  None	  None
Meehan	None	  None	None	None	  None	  None	None	  None	  None	  None	  None	  None
Faunce	None	  None	None	None	None	  None	None	  None	None	None	  None	  None
1002: Fluvaquents, frequently flooded	Frequent Very long Depth: 0.5			   Frequent   Very long   Depth:   0.7		  -   Frequent   Very long   Depth:   0.5		    Occasional  Brief  Depth:   0.5	Occasional Brief Depth:	     Occasional   Long   Depth:   0.5	    Occasional   Long   Depth:   0.5	  -   Frequent   Very long   Depth:   0.5
Seelyeville	Frequent Very long Depth:	  Frequent   Very long   Depth:   1.0		Frequent   Very long   Depth:   1.0	Frequent   Very long   Depth:   1.0	Frequent   Very long   Depth:   1.0	Frequent Very long Depth:	  Frequent   Very long   Depth:   1.0	Frequent   Very long   Depth:   1.0		  Frequent   Very long   Depth:   1.0	Frequent   Very long   Depth:   1.0
Hapludalfs	  None	  None	  None	  None	  None	  None	  None	  None	  None	  None	  None	  None
Water.		 		 	 	    -		 	 	 	   	    -
1030: Pits, gravel.		     		   	   	   		     	     	   	   	   
Udipsamments.												

Map symbol and component name	   January   	   February   	   March   	   April 	   May 	   June 	   July   	   August   	  September   	   October   	   November   	   December   
	İ	İ	İ	İ	<u> </u>		İ	İ			İ	
1030:	į	į	į	j	İ	İ	į	į	İ	İ	į	j
Corliss	None	None	None	None	None	None	None	None	None	None	None	None
			ļ					ļ				
Karlstad	None	None	None	None	None	None	None	None	None	None	None	None
Hangaard	  None     	  None     	  None     	  Occasional   Very   brief   Depth:	  Rare   Very   brief   Depth:	  Rare   Very   brief   Depth:	  None     	  None     	  None     	  None     	  None     	  None     
	[	[	ļ	0.3	0.3	0.1	[	ļ			[	
1001												
1031: Seelyeville,	1	1	I I	l I	l I	l I	1	I I	 	 	1	l I
ponded	Fromiont	Frequent	Frequent	Frequent	  Frequent	  Frequent	Frequent	Frequent	Frequent	Frequent	Frequent	  Frequent
ponded	Very long				Very long							
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:
	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	İ	İ	į	j	İ	İ	į	į	İ	İ	İ	İ
Cathro	Occasional	Occasional	Occasional	Frequent	Frequent	Occasional	Rare	Rare	Rare	Occasional	Occasional	Occasional
	Long	Long	Long	Long	Long	Brief	Very	Very	Brief	Brief	Long	Long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	Depth:	Depth:	Depth:	Depth:
	0.3	0.3	0.5	0.5	0.5	0.5	Depth:	Depth:	0.3	0.3	0.3	0.3
Dora	Occasional	Occasional	Occasional	Frequent	  Frequent	  Occasional	Rare	Rare	  Rare	Occasional	Occasional	Occasional
	Long	Long	Long	Long	Long	Brief	Very	Very	Brief	Brief	Long	Long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	Depth:	Depth:	Depth:	Depth:
	0.3	0.3	0.5	0.5	0.5	0.5	Depth:	Depth:	0.3	0.3	0.3	0.3
Markey	0.0000000000000000000000000000000000000	0.000001	0.0000000000000000000000000000000000000	Emagrant	  Frequent	  Occasional	Domo	  Rare	Rare	0.000001	Occasional	0.0000000000000000000000000000000000000
Markey	Long	Long	Long	Long	Long	Brief	Very	Very	Brief	Brief	Long	Long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	Depth:	Depth:	Depth:	Depth:
	0.3	0.3	0.5	0.5	0.5	0.5	Depth:	Depth:	0.3	0.3	0.3	0.3
1067:			 	 	 	  -		 	 			 
Fluvaquents,			i i	I I	 	I I		i i	 	 		I I
frequently			 	 	 	 		 	 	 		I I
flooded	Frequent	Frequent	Frequent	Frequent	  Frequent	  Frequent	Occasional	Occasional	Occasional	Occasional	Occasional	Frequent
1100404	Very long				Very long			Brief	Brief	Long	Long	Very long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:
	0.5	0.5	0.5	0.7	0.7	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	İ	İ	ĺ	İ			İ	ĺ			İ	İ
Hapludalfs	None	None	None	None	None	  None 	None	None	None	None	None	  None 

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol   and   component name	January	February   	March 	April   	May   	June   	July   	August   	September   	October   	November   	December   
1067:												
		   <del>                                   </del>	   <del>                                   </del>	   <del>                                   </del>	   <del>                                   </del>	 	 	 	 	 	 	 
Seelyeville	_	Frequent	Frequent	Frequent	Frequent	Frequent	Frequent	Frequent	Frequent		Frequent	Frequent
l i	Very long Depth:	Very long   Depth:	Very long   Depth:	Very long   Depth:	Very long   Depth:	Very long   Depth:	Very long   Depth:	Very long   Depth:	Very long   Depth:			Very long   Depth:
ļ	1.0	Depth:   1.0	Depth:   1.0	Depth:   1.0	Depth:   1.0	Depth:   1.0	Depth:   1.0	Depth:   1.0	Depth:   1.0	Depth:	Depth:	Depth:
I	1.0	1 1.0	1.0	1.0	1.0	1.0	1.0	1 1.0	1.0	1.0	1.0	1 1.0
Water.												
   1133B:		 				 	 	 	 		 	 
Skime	None	None	None	None	None	None	None	None	None	None	None	None
į		İ			İ	j	j	İ	j	İ	İ	į
Hiwood	None	None	None	None	None	None	None	None	None	None	None	None
Zippel	None	  None	  None	Occasional	Occasional	Occasional	  None	  None	  Rare	Occasional	  Occasional	  None
				Brief	Brief	Very			Very	Very	Very	
i		! 	 	Depth:	Depth:	brief	İ	! 	brief	brief	brief	i
i		! 	 	0.3	0.3	Depth:	İ	! 	Depth:	Depth:	Depth:	i
i						0.3	İ		0.1	0.1	0.1	i
i					 		İ					i
1134:		İ				İ	İ	İ	İ		İ	İ
Borup	None	None	None	Occasional	Occasional	Occasional	None	None	Rare	Rare	Occasional	None
ĺ				Brief	Brief	Very	ĺ		Very	Very	Very	ĺ
ĺ				Depth:	Depth:	brief	ĺ		brief	brief	brief	ĺ
ĺ				0.3	0.3	Depth:	ĺ		Depth:	Depth:	Depth:	ĺ
į						0.3			0.1	0.1	0.1	ĺ
Glyndon	None	  None	None	None	  None	  None	  None	None	  None	  None	  None	  None
Augsburg,		 	 	 	 	 	 	 	 		 	1
depressional	Occasional	  Occasional	  Occasional	Fremient	Frequent	Occasional	  Pare	Rare	Occasional	Occasional	Occasional	Occasional
depressionar	Long	Long	Long	Long	Long	Brief	Very	Very	Brief	Brief	Long	Long
ļ	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	Depth:	Depth:	Depth:	Depth:
ļ	0.5	0.5	0.5	0.5	0.5	0.5	Depth:	Depth:	0.3	0.3	0.5	0.5
i	***						0.3	0.3				
Skime	Non-	None	None	None	None	None	    None	None	None	None	None	None
Skime	None	None 	None	None	None 	None	None	None	None	None	None	None
1144:		İ				İ	İ	İ	İ	İ	İ	İ
Strathcona,						İ	İ	İ	İ	İ		ĺ
depressional	Occasional	Occasional	Occasional	Frequent	Frequent	Occasional	Rare	Rare	Rare	Occasional	Occasional	Occasional
į	Long	Long	Long	Long	Long	Brief	Very	Very	Brief	Brief	Long	Long
į	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	Depth:	Depth:	Depth:	Depth:
į	0.5	0.5	0.5	0.5	0.5	0.5	Depth:	Depth:	0.3	0.3	0.5	0.5

Map symbol and component name	January	February   	March   	April   	May   	June   	July   	August   	September   	October   	November   	December   
1144:		 	 	 	 	 	 	 	[ [	 	 	
Kratka,		l I	l I	 	 	 	I I	l I	ľ	 	l I	 
depressional	Occasional	Occasional	Occasional	  Frequent	Frequent	Occasional	  Rare	Rare	Rare	  Occasional	Occasional	Occasiona
40220000	Long	Long	Long	Long	Long	Brief	Very	Very	Brief	Brief	Long	Long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	Depth:	Depth:	Depth:	Depth:
	0.5	0.5	0.5	0.5	0.5	0.5	Depth:	Depth:	0.3	0.3	0.5	0.5
							0.3	0.3				
Kratka	None	  None	  None	  Occasional	  Occasional	  Rare	  None	  None	  None	  Rare	  Rare	  None
				Brief	Very	Very				Very	Very	
				Depth:	brief	brief				brief	brief	
				0.3	Depth:	Depth:			1	Depth:	Depth:	
					0.3	0.1				0.1	0.1	
Northwood	Occasional	  Occasional	Occasional	  Frequent	Frequent	  Frequent	  Rare	  Rare	Occasional	  Occasional	  Occasional	Occasiona
İ	Long	Long	Long	Long	Long	Brief	Very	Very	Brief	Brief	Long	Long
İ	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	Depth:	Depth:	Depth:	Depth:
	0.5	0.5	0.5	0.5	0.5	0.5	Depth:	Depth:	0.3	0.5	0.5	0.5
1154:		į	į		į		į	į	į	į į	į	į
Sax	Oggagional	   0aaaaional	000001	Fromiont	Frequent	  Frequent	  Occasional	  Paro	000001	  Occasional	   0aaaai on a 1	Ogganiona
Jax	Long	Long	Long	Long	Long	Brief	Very	Very	Brief	Brief	Long	Long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	Depth:	Depth:	Depth:	Depth:
	0.5	0.5	0.5	0.5	0.5	0.5	Depth:	Depth:	0.3	0.5	0.5	0.5
							0.3	0.3				
Wabanica	None	  None	None	Occasional	  Occasional	  Occasional	  Rare	None	  Rare	  Occasional	  Occasional	None
i		İ	İ	Brief	Brief	Very	Very	İ	Very	Very	Brief	į
İ		İ	İ	Depth:	Depth:	brief	brief	İ	brief	brief	Depth:	į
į		İ	İ	0.3	0.3	Depth:	Depth:	İ	Depth:	Depth:	0.3	İ
						0.3	0.3		0.3	0.3		į
Cathro	Occasional	  Occasional	  Occasional	  Frequent	  Frequent	  Occasional	  Rare	  Rare	  Rare	  Occasional	  Occasional	  Occasiona
İ	Long	Long	Long	Long	Long	Brief	Very	Very	Brief	Brief	Long	Long
į	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	Depth:	Depth:	Depth:	Depth:
	0.3	0.3	0.5	0.5	0.5	0.5	Depth:	Depth:	0.3	0.3	0.3	0.3
Woodslake	Occasional	Occasional	Occasional	Frequent	Frequent	Occasional	Occasional	Occasional	Occasional	Occasional	Occasional	Occasiona
	Long	Long	Long	Long	Long	Long	Brief	Brief	Brief	Brief	Long	Long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:
	0.5	0.5	0.5	0.5	0.5	Depth:   0.5	0.5	0.5	0.5	0.5	0.5	0.5
		1	1		1		1	1	1	1	1	

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January 	February   	March   	April	May   	June   	July   	August 	September	October   	November   	December
1158:	 				 	 	 				 	
Skagen	None	None	None	None	None	None	None	None	None	None	None	None
Percy	  None   	  None     	  None     	Occasional Brief Depth: 0.3	  Occasional   Brief   Depth:   0.3	  Occasional   Very   brief   Depth:   0.3	  None     	  None     	Rare  Very  brief  Depth:  0.3	Rare   Very   brief   Depth:   0.3	  Occasional   Brief   Depth:   0.3	  None     
Foxhome	  None 	  None 	  None 	  None 	  None 	  None 	  None 	  None 	  None 	  None 	  None 	  None   
Skagen, very	 		İ		! 	! 	i I					
cobbly	  None	None	None	None	None	  None	None	None	None	None	None	None
Percy, very									İ		İ	
cobbly	None     	None       	None       	Occasional Brief Depth: 0.3	Occasional Brief Depth:	Occasional Very brief Depth:	None       	None       	Rare   Very   brief   Depth:   0.3	Rare   Very   brief   Depth:   0.3	Occasional   Brief   Depth:   0.3	None       
Foxhome	  None 	  None 	None	  None 	  None 	  None 	  None 	None	  None 	  None 	  None 	  None 
1179B:	İ	j	İ	j	j	İ	į	Ì	İ	į	İ	į
Moranville	None	None	None	None	None	None	None	None	None	None	None	None
Baudette	  None	None	None	None	  None	  None	  None	None	None	None	  None	  None
Hiwood	  None	None	None	None	  None	  None	  None	None	None	None	  None	  None
Spooner	  None     	None     	  None       	Occasional Brief Depth:	Occasional Brief Depth:	Occasional Very brief Depth:	  None       	  None     	Rare   Very   brief   Depth:   0.3	Occasional Very brief Depth:	Occasional Brief Depth:	  None       
1181:	İ	İ	İ	j	İ	İ	İ	İ	İ	İ	İ	İ
Rosewood	None     	None	None     	Occasional Brief Depth: 0.3	Occasional Very brief Depth:	Rare   Very   brief   Depth:   0.3	None     	None     	None     	Rare   Very   brief   Depth:   0.3	None     	None     
Ulen	  None	None	None	None	  None	  None	  None	None	None	  None	  None	  None

				   			ļ !					
Map symbol and	January 	February	March	April 	May 	June 	July 	August	September	October	November	December
component name	<u> </u>	1	<u> </u>	<u> </u>	<u> </u>	<u> </u>	1	1	1	1	1	1
1181:	 			 		 		 	 			
Redby	None	None	None	None	None	None	None	None	None	None	None	None
Deerwood	  Occasional	Occasional	Occasional	Frequent	Frequent	  Frequent	  Rare	  Rare	Occasional	Occasional	  Occasional	Occasional
Deel wood	Long	Long	Long	Long	Long	Brief	Very	Very	Brief	Brief	Long	Long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	Depth:	Depth:	Depth:	Depth:
	0.5	0.5	0.5	0.5	0.5	0.5	Depth:	Depth:	0.3	0.5	0.5	0.5
		į	ļ		į	į	0.3	0.3	į	į	į	į
Syrene	  None	  None	None	  Occasional	  Rare	  Rare	  None	  None	  None	  None	  None	  None
-1				Very	Very	Very						
	İ	i	İ	brief	brief	brief	į	i	i	İ	i	i
	İ	İ	İ	Depth:	Depth:	Depth:	į	Ì	Ì	İ	İ	İ
			ļ	0.3	0.3	0.1	į					
1182:	 		 	 		 	 	 	 			
Warroad	None	None	None	Occasional	Occasional	Rare	None	None	None	Rare	Rare	None
				Brief	Very	Very		[	[	Very	Very	
				Depth:	brief	brief		1	1	brief	brief	
				0.3	Depth:	Depth:				Depth:	Depth:	
	 			 	0.3	0.1		 		0.1	0.1	
Wabanica	  None	None	None	Occasional	Occasional	Occasional	Rare	None	Rare	Occasional	Occasional	None
				Brief	Brief	Very	Very	1	Very	Very	Brief	
		[		Depth:	Depth:	brief	brief	[	brief	brief	Depth:	[
		!		0.3	0.3	Depth:	Depth:	ļ	Depth:	Depth:	0.3	!
	 	 				0.3	0.3	 	0.3	0.3	 	 
Enstrom	None	None	None	None	None	None	None	None	None	None	None	None
Sax	  Occasional	  Occasional	Occasional	  Frequent	Frequent	  Frequent	  Occasional	Rare	  Occasional	  Occasional	  Occasional	  Occasional
	Long	Long	Long	Long	Long	Brief	Very	Very	Brief	Brief	Long	Long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	Depth:	Depth:	Depth:	Depth:
	0.5	0.5	0.5	0.5	0.5	0.5	Depth:	Depth:	0.3	0.5	0.5	0.5
	 			 		 	0.3	0.3	 			 
1187:	 			 		 						
Dora, ponded	Frequent	Frequent	Frequent	Frequent	Frequent	Frequent	Frequent	Frequent	Frequent	Frequent	Frequent	Frequent
	Very long											
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:
	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Seelyeville,			i	 			i		İ			
ponded	Frequent	Frequent	Frequent	Frequent	Frequent	Frequent	Frequent	Frequent	Frequent	Frequent	Frequent	Frequent
_	Very long											
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:
	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and	January	   February	   March	   April 	   May 	   June 	   July 	   August 	  September	   October 	   November 	   December
component name		İ	İ	İ	İ	İ	İ	İ	İ	<u> </u>	İ	<u> </u>
1187:		 		 	1	 	 	1		 		 
Wildwood	  Occasional	Occasional	Occasional	  Frequent	Frequent	Frequent	Occasional	Rare	Occasional	Occasional	Occasional	Occasional
	Long	Long	Long	Long	Long	Brief	Very	Very	Brief	Brief	Long	Long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	Depth:	Depth:	Depth:	Depth:
	0.5	0.5 	0.5	0.5 	0.5	0.5 	Depth:	Depth:	0.3	0.5 	0.5	0.5 
Boash	None	  None	  None	  Occasional	  Occasional	  Occasional	  Rare	Rare	Rare	  Occasional	  Occasional	  None
j		ĺ	ĺ	Brief	Brief	Very	Very	Very	Very	Very	Brief	ĺ
				Depth:	Depth:	brief	brief	brief	brief	brief	Depth:	
		!	ļ	0.3	0.3	Depth:	Depth:	Depth:	Depth:	Depth:	0.3	
			ļ			0.3	0.2	0.2	0.2	0.2		
1191:		 		 		 	 	 		 		 
Sahkahtay	None	None	None	Occasional	Rare	Rare	None	None	None	Rare	None	None
				Very	Very	Very				Very		
		!	ļ	brief	brief	brief	!	!	!	brief	!	
				Depth:	Depth:	Depth:				Depth:		
		l I	l I	0.3	0.3	0.1	l I	l I		0.1	 	l I
Cormant	None	None	None	Occasional	Occasional	Rare	None	None	None	Rare	None	None
j		ĺ	ĺ	Brief	Very	Very	ĺ	ĺ	İ	Very	ĺ	ĺ
				Depth:	brief	brief				brief		
				0.3	Depth:	Depth:				Depth:		
		l I	l I	l I	0.3	0.2	l I	l I		0.2	 	l I
Deerwood	Occasional	Occasional	Occasional	Frequent	Frequent	Frequent	Rare	Rare	Occasional	Occasional	Occasional	Occasional
j	Long	Long	Long	Long	Long	Brief	Very	Very	Brief	Brief	Long	Long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	Depth:	Depth:	Depth:	Depth:
	0.5	0.5	0.5	0.5	0.5	0.5	Depth:	Depth:	0.3	0.5	0.5	0.5
		 	 	 	 	 	0.3	0.3		 	 	 
Karlstad	None	  None 	None	None	  None	  None 	  None 	  None	None	  None	  None	  None 
Redby	None	  None 	  None 	  None	  None 	  None 	  None 	  None 	None	  None 	  None 	  None 
1206:			İ		İ		İ		İ		İ	! 
Cormant	None	None	None		Occasional	Rare	None	None	None	Rare	None	None
			ļ	Brief	Very	Very				Very		
				Depth:	brief	brief				brief		
		l I	I I	0.3	Depth:	Depth:	l I	 		Depth:	I I	 
Redby	None	None	None	None	None	None	None	None	None	None	None	None
Hiwood	None	  None	  None	None	  None	  None	  None	  None	None	  None	  None	  None
1114000	140116	140116		110116	140116	140116	140116	140116		140116		110116

	_				l !	_			1			!
Map symbol and	January	February 	March	April 	May 	June 	July 	August 	September	October 	November 	December
component name		<u> </u>										
1206:												
Leafriver		1			Frequent	Frequent	1	Rare	Occasional	1	1	
	Long	Long	Long	Long	Long	Brief	Very	Very	Brief	Brief	Long	Long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	Depth:	Depth:	Depth:	Depth:
	0.5	0.5	0.5	0.5	0.5	0.5	Depth:	Depth:	0.3	0.5	0.5	0.5
		l I	l I	l I	 	l I	0.3	0.3		 	l I	I I
1214:		 										
Mustinka	None	None	None	Occasional	Occasional	Occasional	Rare	Rare	Rare	Occasional	Occasional	None
		İ		Brief	Brief	Very	Very	Very	Very	Very	Brief	
		İ	İ	Depth:	Depth:	brief	brief	brief	brief	brief	Depth:	į
		İ	İ	0.3	0.3	Depth:	Depth:	Depth:	Depth:	Depth:	0.3	į
j		j	İ	j	İ	0.3	0.2	0.2	0.2	0.2	j	į
Espelie	None	None	None	1		Occasional	None	None	Rare	Rare	Rare	None
				Brief	Brief	Very			Very	Very	Very	
				Depth:	Depth:	brief			brief	brief	brief	
				0.3	0.3	Depth:			Depth:	Depth:	Depth:	
		 	 	l I	 	0.3	 	 	0.1	0.1	0.1	
Wildwood	Occasional	Occasional	Occasional	Frequent	  Frequent	  Frequent	Occasional	  Rare	Occasional	Occasional	Occasional	Occasiona
	Long	Long	Long	Long	Long	Brief	Very	Very	Brief	Brief	Long	Long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	Depth:	Depth:	Depth:	Depth:
	0.5	0.5	0.5	0.5	0.5	0.5	Depth:	Depth:	0.3	0.5	0.5	0.5
İ		ĺ	ĺ	ĺ	ĺ	ĺ	0.3	0.3	İ	ĺ	ĺ	İ
Dalbo	None	  None	None	None	  None	  None	  None	  None	None	None	  None	  None
Daibo	None	None	None	None	None	 	None	None	None	None	 	
1274B:		İ	İ	İ		İ	İ				İ	i
Redby	None											
Hiwood	None	 										
Leafriver,		 		 		 	 	 			 	
wooded	Occasional	Occasional	Occasional	Frequent	Frequent	Frequent	Occasional	Rare	Occasional	Occasional	Occasional	Occasional
	Long	Long	Long	Long	Long	Brief	Very	Very	Brief	Brief	Long	Long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	Depth:	Depth:	Depth:	Depth:
	0.5	0.5	0.5	0.5	0.5	0.5	Depth:	Depth:	0.3	0.5	0.5	0.5
							0.3	0.3				
Clearriver	None	 										
Cormant	None	  None	None	Occasional	Occasional	Rare	  None	None	None	Rare	  None	None
				Brief	Very	Very				Very		
j				Depth:	brief	brief				brief		
j				0.3	Depth:	Depth:				Depth:		
		I .		1	0.3	0.2	I .	i e	1	0.2		t contract to the contract to

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	   January 	   February 	   March 	   April 	   May 	   June 	   July 	   August 	  September 	   October 	   November   	December
1274B: Zimmerman	    None	    None	    None	None	None	    None	    None	None				
1298:	 	 	 	 		 	 	 			 	
Borup	  None     	  None     	  None     	Occasional Brief Depth:	Occasional Brief Depth:	Occasional Very brief Depth:	  None     	  None   	Rare   Very   brief   Depth:   0.1	Rare   Very   brief   Depth:   0.1	Occasional Very brief Depth:	None
Augsburg,	 				 	 	 				 	
depressional	Occasional Long Depth:	Occasional Long Depth:	Occasional Long Depth:	Frequent   Long   Depth:   0.5	Frequent   Long   Depth:   0.5	Occasional Brief Depth:	Rare   Very   brief   Depth:   0.3	Rare   Very   brief   Depth:   0.3	Occasional Brief Depth:	Occasional Brief Depth:	Occasional Long Depth:	Occasional Long Depth: 0.5
Glyndon	  None	  None	None	  None	  None	  None	  None	None	None	  None	  None	None
Sago	  Occasional   Long   Depth:   0.5	  Occasional   Long   Depth:   0.5	  Occasional   Long   Depth:   0.5	  Frequent   Long   Depth:   0.5	  Frequent   Long   Depth:   0.5	  Frequent   Brief   Depth:   0.5	  Rare   Very   brief   Depth:   0.3	Rare   Very   brief   Depth:   0.3	Occasional   Brief   Depth:   0.3	  Occasional   Brief   Depth:   0.5	  Occasional   Long   Depth:   0.5	Occasional   Long   Depth:   0.5
Skime	  None 	  None 	  None	  None 	  None 	  None 	  None 	None	  None	  None 	  None 	  None
1302:	l I	İ		i I		! 	 	1	i		İ	
Foldahl	None	None	None	None	None	None	None	None	None	None	None	None
Kratka	  None     	  None     	  None     	  Occasional   Brief   Depth:   0.3	  Occasional   Very   brief   Depth:   0.3	  Rare   Very   brief   Depth:   0.1	  None     	  None   	  None     	  Rare   Very   brief   Depth:   0.1	  Rare   Very   brief   Depth:   0.1	None
Foxhome	  None 	  None	  None	  None	  None	  None 	  None	None	None	  None	  None	  None
1304: Glyndon	    None	    None	    None	    None	    None	    None	    None	None	None	    None	    None	None
Borup	  None       	  None       	  None       	  Occasional   Brief   Depth:   0.3	  Occasional   Brief   Depth:   0.3	  Occasional   Very   brief   Depth:   0.3	  None       	None       	Rare  Very  brief  Depth:  0.1	  Rare   Very   brief   Depth:   0.1	  Occasional   Very   brief   Depth:   0.1	   None 

Map symbol and component name	January   	February   	March   	April   	May   	June   	July   	August   	September	October	November	December
1304: Skime	    None	    None	    None	    None	    None	    None	    None	    None	None	None	    None	    None
Dirino									110110			
1305:	İ	İ	j	j	İ	İ	İ	j			İ	İ
Hilaire	None	None	None	None	None	None	None	None	None	None	None	None
Espelie	  None     	  None     	  None     	Occasional Brief Depth:	Occasional Brief Depth:	Occasional Very brief Depth:	  None     	  None     	Rare Very brief Depth: 0.1	Rare Very brief Depth:	  Rare   Very   brief   Depth:   0.1	  None     
Grano	  None     	  None     	  None     	  Occasional   Brief   Depth:   0.3	  Occasional   Brief   Depth:   0.3	  Occasional   Very   brief   Depth:   0.3	  Rare   Very   brief   Depth:   0.2	  Rare   Very   brief   Depth:   0.2	Rare Very brief Depth: 0.2	Occasional Very brief Depth:	  Occasional   Brief   Depth:   0.3	  None     
Redby	  None	  None	  None	  None	  None	  None	  None	  None	None	None	  None	  None
1314:	 	 	 	 	 	 	 	 		 	 	 
Tacoosh	Occasional Long Depth:	Occasional Long Depth:	Occasional Long Depth:	Frequent   Long   Depth:   0.5	Frequent   Long   Depth:   0.5	Occasional Brief Depth:	Rare   Very   brief   Depth:   0.3	Rare   Very   brief   Depth:   0.3	Rare Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Long Depth:	Occasiona   Long   Depth:   0.3
Rifle	  Occasional   Long   Depth:   0.3	  Occasional   Long   Depth:   0.3	  Occasional   Long   Depth:   0.5	  Frequent   Long   Depth:   0.5	  Frequent   Long   Depth:   0.5	  Frequent   Brief   Depth:   0.5	Occasional Very brief Depth:	Occasional Very brief Depth:	Occasional Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional   Long   Depth:   0.3	  Occasiona   Long   Depth:   0.3
Sax	  Occasional   Long   Depth:   0.5	  Occasional   Long   Depth:   0.5	  Occasional   Long   Depth:   0.5	  Frequent   Long   Depth:   0.5	  Frequent   Long   Depth:   0.5	  Frequent   Brief   Depth:   0.5	  Occasional   Very   brief   Depth:   0.3	  Rare   Very   brief   Depth:   0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth:	  Occasional   Long   Depth:   0.5	  Occasional   Long   Depth:   0.5
1316:	 	 	 	 	 	 	 	 		 	 	 
Wheatville	None	None	None	None	  None	None	None	None	None	None	None	  None

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February   	March 	April 	May   	June	July   	August   	September	October   	November   	December
 1316:		 	 		 		 	 		 	 	
Augsburg	None	  None     	  None     	Occasional   Brief   Depth:   0.3	Occasional Brief Depth:	Occasional   Very   brief   Depth:   0.3	  None     	  None     	Rare   Very   brief   Depth:   0.3	Occasional Brief Depth:	Occasional Brief Depth:	None
Grano	None	  None     	  None     	Occasional   Brief   Depth:   0.3	Occasional Brief Depth:	Occasional Very brief Depth:	   Rare   Very   brief   Depth:   0.2	  Rare   Very   brief   Depth:   0.2	Rare   Very   brief   Depth:   0.2	Occasional Very brief Depth:	Occasional Brief Depth:	     
1326:		İ	İ		İ		İ	İ	İ		İ	
Augsburg,								[				
depressional					Frequent	Occasional	1	Rare		Occasional		
	Long	Long	Long	Long	Long	Brief	Very	Very	Brief	Brief	Long	Long
ļ	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	Depth:	Depth:	Depth:	Depth:
ļ	0.5	0.5	0.5	0.5	0.5	0.5	Depth:	Depth:	0.3	0.3	0.5 	0.5
Wabanica,		 			 		 	 			 	
depressional	Occasional	Occasional	Occasional	Frequent	Frequent	Occasional	Rare	Rare	Occasional	Occasional	Occasional	Occasiona
i	Long	Long	Long	Long	Long	Brief	Very	Very	Brief	Brief	Long	Long
į	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	Depth:	Depth:	Depth:	Depth:
İ	0.5	0.5	0.5	0.5	0.5	0.5	Depth:	Depth:	0.3	0.3	0.5	0.5
  Sax	Occasional	  Occasional	Occasional	Frequent	  Frequent	  Frequent	  Occasional	  Rare	Occasional	  Occasional	  Occasional	  Occasiona
į	Long	Long	Long	Long	Long	Brief	Very	Very	Brief	Brief	Long	Long
ĺ	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	Depth:	Depth:	Depth:	Depth:
	0.5	0.5	0.5	0.5	0.5	0.5	Depth:	Depth:	0.3	0.5	0.5	0.5
Espelie	None	  None	  None	Occasional	  Occasional	  Occasional	  None	None	Rare	  Rare	  Rare	None
i		İ	İ	Brief	Brief	Very	İ	į	Very	Very	Very	İ
j		İ	İ	Depth:	Depth:	brief	İ	Ì	brief	brief	brief	İ
ĺ		ĺ	ĺ	0.3	0.3	Depth:	ĺ	Ì	Depth:	Depth:	Depth:	
ļ					į	0.3			0.1	0.1	0.1	
Zippel	None	  None	  None	  Occasional	  Occasional	  Occasional	  None	None	Rare	Occasional	  Occasional	  None
 		İ	İ	Brief	Brief	Very	İ	İ	Very	Very	Very	
į		İ	İ	Depth:	Depth:	brief	İ	İ	brief	brief	brief	
į		İ	İ	0.3	0.3	Depth:	İ	İ	Depth:	Depth:	Depth:	
,						0.3			0.1	0.1	0.1	

Map symbol and component name	January	February	March	April   	May   	June   	July   	August 	September 	October   	November   	December
1327B:				 	 	 	 		 		 	 
Karlstad	None	None	None	None	None	None	None	None	None	None	None	None
Marquette	None	None	None	None	  None	  None	  None	None	None	None	  None	  None
Sahkahtay	None	None	  None   	  Occasional   Very   brief   Depth:   0.3	  Rare   Very   brief   Depth:   0.3	  Rare   Very   brief   Depth:   0.1	  None       	  None     	  None     	Rare   Very   brief   Depth:   0.1	  None     	  None       
Redby	None	None	  None 	  None 	  None 	  None 	  None 	  None	None	  None 	  None 	  None 
1328:												
Northwood,						!	!				!	!
wooded						Occasional	!	Rare	Rare	1	Occasional	1
	Long	Long	Long	Long	Long	Brief	Very	Very	Very	Brief	Long	Long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	brief	Depth:	Depth:	Depth:
	0.3	0.3	0.3	0.3	0.3	0.3	Depth:	Depth:	Depth:	0.3	0.3	0.3
Berner, wooded	Occasional	Occasional	  Occasional	  Frequent	  Frequent	  Occasional	  Rare	Rare	Rare		  Occasional	  Occasiona
	Long	Long	Long	Long	Long	Brief	Very	Very	Very	Brief	Long	Long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	brief	Depth:	Depth:	Depth:
	0.3	0.3	0.3	0.3 	0.3 	0.3	Depth:	Depth:	Depth:	0.3	0.3 	0.3 
Grygla	None	None	  None	  Occasional	  Occasional	  Rare	  None	  None	None	  Rare	  Rare	  None
				Brief	Very	Very				Very	Very	
				Depth:	brief	brief				brief	brief	
				0.3	Depth:	Depth:	!			Depth:	Depth:	!
					0.3	0.1				0.1	0.1	
1333:			 	 	l I	 	 			l I	 	l I
Dora, wooded	Occasional	Occasional	Occasional	Fremient	Frequent	Occasional	  Pare	Rare	Rare	Occasional	Occasional	Occasiona
Dola, Modaca	Long	Long	Long	Long	Long	Brief	Very	Very	Very	Brief	Long	Long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	brief	Depth:	Depth:	Depth:
	0.3	0.3	0.3	0.3	0.3	0.3	Depth:	Depth:	Depth:	0.3	0.3	0.3
				İ	į	į	0.2	0.2	0.2		į	į
Lupton	Occasional	Occasional	  Occasional	  Frequent	  Frequent	  Occasional	  Rare	Rare	Rare	1	  Occasional	  Occasiona
	Long	Long	Long	Long	Long	Brief	Very	Very	Very	Brief	Long	Long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	brief	Depth:	Depth:	Depth:
	0.3	0.3	0.3	0.3	0.3	0.3	Depth:	Depth:	Depth:	0.3	0.3	0.3

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	   January 	   February 	   March 	April	   May 	   June 	   July 	   August 	  September 	   October 	   November 	   December 
	<u> </u>	1	1	1	<u> </u>	<u> </u>	I	<u> </u> 	1	<u> </u> 	<u> </u>	<u> </u>
1333:		İ	İ		İ		İ		İ		 	 
Wildwood	Occasional	Occasional	Occasional	Frequent	Frequent	Frequent	Occasional	Rare	Occasional	Occasional	Occasional	Occasional
	Long	Long	Long	Long	Long	Brief	Very	Very	Brief	Brief	Long	Long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	Depth:	Depth:	Depth:	Depth:
	0.5	0.5	0.5	0.5	0.5	0.5 	Depth:	Depth:	0.3	0.5	0.5 	0.5
Auganaush	  None	  None	  None		  Occasional	  Occasional	  Rare	  Rare	Rare	  Occasional	  Occasional	  None
		!	ļ	Brief	Brief	Very	Very	Very	Very	Very	Brief	
				Depth:	Depth:	brief	brief	brief	brief	brief	Depth:	
	 	 	 	0.3	0.3	Depth:	Depth:	Depth:	Depth:	Depth:	0.3 	 
1356:	 	 	 	 		 	 	 		 	 	 
Water,					[							
miscellaneous.	 	 	[ [	 	 	 	 	 		 	 	 
1399B:	İ	İ	İ		İ	İ	İ		İ	İ	İ	İ
Two Inlets	None	None	None	None	None	None	None	None	None	None	None	None
Wurtsmith	  None 	  None	None	None	None	  None	  None	None	None	None	  None 	  None 
Zimmerman	  None	  None	None	None	None	  None	  None 	None	None	None	  None	  None
Meehan	  None	None	None	None	None	  None	  None	  None	None	  None	  None	  None
1401:	! 	İ	İ	 		! 	! 	 		! 	! 	! 
Grygla,	İ	İ	į		į	İ	İ	İ	İ	İ	İ	İ
depressional	Occasional	Occasional	Occasional	Frequent	Frequent	Occasional	Rare	Rare	Rare	1	Occasional	Occasional
	Long	Long	Long	Long	Long	Brief	Very	Very	Very	Brief	Long	Long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	brief	Depth:	Depth:	Depth:
	0.3 	0.3	0.3	0.3	0.3	0.3 	Depth:	Depth:	Depth:	0.3 	0.3 	0.3 
Northwood,	 	 	 	 		 	 	 		 	 	 
wooded	Occasional	Occasional	Occasional	Frequent	Frequent	Occasional	Rare	Rare	Rare	Occasional	Occasional	Occasional
	Long	Long	Long	Long	Long	Brief	Very	Very	Very	Brief	Long	Long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	brief	Depth:	Depth:	Depth:
	0.3	0.3	0.3	0.3	0.3	0.3	Depth:	Depth:	Depth:	0.3	0.3	0.3
Chilgren	  None	  None	  None	  Occasional	  Occasional	  Occasional	  None	  None	Rare	  Rare	  Occasional	  None
				Brief	Brief	Very			Very	Very	Brief	
				Depth:	Depth:	brief			brief	brief	Depth:	
		ļ	ļ	0.3	0.3	Depth:			Depth:	Depth:	0.3	
	 	 	 	 	 	0.3	 	 	0.3	0.3	 	 

Map symbol and	January	February	March	April	May	June	July	August	September	October	November	December
component name	<u> </u>	<u> </u>				<u> </u>	<u> </u>		1		<u> </u>	<u> </u>
1401:	 	 	[ [	 	 	 					 	 
Grygla	None	  None	None	Occasional	Occasional	Rare	None	None	None	Rare	Rare	None
	İ	İ	i	Brief	Very	Very	İ	i	i	Very	Very	i
			Ì	Depth:	brief	brief		İ	İ	brief	brief	ĺ
			[	0.3	Depth:	Depth:				Depth:	Depth:	
	l	l	Į.	ļ	0.3	0.1		J	Ţ	0.1	0.1	
1402:	 	 		 	 	 						
Leafriver,	 	 	i I	I I	 	l I			i	 	 	 
wooded	Occasional	Occasional	Occasional	Frequent	Frequent	Occasional	Rare	Rare	Rare	Occasional	Occasional	Occasiona
	Long	Long	Long	Long	Long	Brief	Very	Very	Very	Brief	Long	Long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	brief	Depth:	Depth:	Depth:
	0.3	0.3	0.3	0.3	0.3	0.3	Depth:	Depth:	Depth:	0.3	0.3	0.3
	ĺ	ĺ	İ	İ	İ	İ	0.2	0.2	0.2	İ	į	į
Cormant	None	  None	  None	000001	Occasional	Domo	None	None	None	Rare	None	  None
COTMANC	None	None	None	Brief	Very	Very	None	None	None	Very	None	None
	 	 	ľ	Depth:	very   brief	very   brief			1	brief	 	 
	 	 	İ	0.3	Depth:	Depth:	İ		i	Depth:	i i	i I
					0.3	0.2			į	0.2	İ	İ
											  Occasional	
Tawas	Long	Occasional   Long	Long	Long	Frequent   Long	Occasional Brief	Wery	Rare   Very	Rare   Very	Brief	Long	Occasiona   Long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	brief	Depth:	Depth:	Depth:
	0.3	0.3	0.3	0.3	0.3	0.3	Depth:	Depth:	Depth:	0.3	0.3	0.3
							0.2	0.2	0.2			
Redby	  None	  None	  None	  None	  None	  None	None	None	None	None	  None	None
1404:	 	 	 		 	 					 	 
Berner, wooded	Occasional	Occasional	Occasional	Frequent	Frequent	Occasional	Rare	Rare	Rare	Occasional	Occasional	Occasiona
	Long	Long	Long	Long	Long	Brief	Very	Very	Very	Brief	Long	Long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	brief	Depth:	Depth:	Depth:
	0.3	0.3	0.3	0.3	0.3	0.3	Depth:	Depth:	Depth:	0.3	0.3	0.3
							0.2	0.2	0.2			
Lupton	Occasional	Occasional	  Occasional	Frequent	  Frequent	  Occasional	Rare	Rare	Rare	Occasional	  Occasional	  Occasiona
•	Long	Long	Long	Long	Long	Brief	Very	Very	Very	Brief	Long	Long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	brief	Depth:	Depth:	Depth:
	0.3	0.3	0.3	0.3	0.3	0.3	Depth:	Depth:	Depth:	0.3	0.3	0.3
	I	i	i	i	i	i	0.2	0.2	0.2	i	i	i

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol	January	   February	March	April	   May	   June	   July	   August	  September	   October	   November	December
and component name	 				 	 	 		 			
1404:				 				[				
Northwood,	 		}	 	 	 	l I	}	 	1	 	
wooded	  Occasional	Occasional	Occasional	  Frequent	Frequent	Occasional	  Rare	Rare	Rare	Occasional	Occasional	  Occasional
WOOded	Long	Long	Long	Long	Long	Brief	Very	Very	Very	Brief	Long	Long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	brief	Depth:	Depth:	Depth:
	0.3	0.3	0.3	0.3	0.3	0.3	Depth:	Depth:	Depth:	0.3	0.3	0.3
		į	į		į		0.2	0.2	0.2	į		
Grygla	  None	  None	  None	  Occasional	  Occasional	  Rare	  None	  None	  None	  Rare	  Rare	  None
			1	Brief	Very	Very		1		Very	Very	
				Depth:	brief	brief				brief	brief	
			ļ	0.3	Depth:	Depth:		ļ		Depth:	Depth:	
	 			 	0.3	0.1	 		 	0.1	0.1	
1405:	 			 		 					 	
Lallie	Frequent	Frequent	Frequent	Frequent	Frequent	Frequent	Occasional	Occasional	Occasional	Occasional	Occasional	Frequent
		Very long						Brief	Brief	Long	Long	Very long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:
	0.5	0.5	0.5	0.7	0.7	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Sax	Occasional	Occasional	Occasional	Frequent	Frequent	  Frequent	Occasional	Rare	Occasional	Occasional	Occasional	Occasional
	Long	Long	Long	Long	Long	Brief	Very	Very	Brief	Brief	Long	Long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	Depth:	Depth:	Depth:	Depth:
	0.5	0.5	0.5	0.5	0.5	0.5	Depth:	Depth:	0.3	0.5	0.5	0.5
	 			 		 	0.3	0.3	 			
Wabanica	  None	None	None	Occasional	Occasional	  Occasional	Rare	None	Rare	Occasional	Occasional	None
			1	Brief	Brief	Very	Very	1	Very	Very	Brief	
			[	Depth:	Depth:	brief	brief	[	brief	brief	Depth:	
			ļ	0.3	0.3	Depth:	Depth:	ļ	Depth:	Depth:	0.3	
	 	 	 	 	 	0.3	0.3	 	0.3	0.3	 	
1414:		İ										
Nereson, very			ļ					ļ				
cobbly	None	None	None	None	None	None	None	None	None	None	None	None
Percy, very		İ										
cobbly	None	None	None		Occasional		None	None	Rare	Rare	Occasional	None
		!	ļ	Brief	Brief	Very	!	ļ	Very	Very	Brief	
				Depth:	Depth:	brief			brief	brief	Depth:	
	 		[ [	0.3	0.3	Depth:	 	[ [	Depth:	Depth:	0.3	 
	 	 	 	 		U.3 	 	 	U.3 	U.3 	 	 
Pelan	None	None	None	None	None	None	None	None	None	None	None	None
Foxhome	None	  None	  None	None	  None	  None	  None	  None	None	  None	  None	  None

Map symbol and component name	January   	February   	March   	April   	May   	June   	July   	August   	September   	October   	November   	Decem   
			1	I					1	I		
L428:			!					ļ				
Karlsruhe	None 	None	None	None	None	None	None	None	None	None	None	None
Syrene	None	None	None	Occasional	Rare	Rare	None	None	None	None	None	None
				Very	Very	Very						
				brief	brief	brief						
				Depth:	Depth:	Depth:						
				0.3	0.3	0.1						
Ulen	None	None	  None	None	  None	  None	  None	None	None	None	  None	  None
444:					 		 				 	l I
Wurtsmith	None	None	None	None	None	None	None	None	None	None	None	None
Meehan	None	None	None	None	  None	  None	  None	None	None	None	  None	None
Clearriver	  None	None	None	None	  None	None	None	None	None	None	  None	None
010411101												
Two Inlets	None	None	None	None	None	None	None	None	None	None	None	None
Cormant	None	None	None	Occasional	Occasional	Rare	None	None	None	Rare	  None	None
				Brief	Very	Very				Very		
				Depth:	brief	brief				brief		
				0.3	Depth:	Depth:				Depth:		
					0.3	0.2				0.2	 	
448:											 	İ
Grano	None	None	None			Occasional	Rare	Rare	Rare	Occasional	Occasional	None
				Brief	Brief	Very	Very	Very	Very	Very	Brief	
				Depth:	Depth:	brief	brief	brief	brief	brief	Depth:	
		!	!	0.3	0.3	Depth:	Depth:	Depth:	Depth:	Depth:	0.3	
					 	0.3	0.2	0.2	0.2	0.2	 	 
Percy	None	None	None			Occasional	None	None	Rare	Rare	Occasional	None
				Brief	Brief	Very			Very	Very	Brief	
				Depth:	Depth:	brief			brief	brief	Depth:	
				0.3	0.3	Depth:			Depth:	Depth:	0.3	
					 	0.3	 		0.3	0.3	 	
Augsburg	None	None	None	Occasional	Occasional	  Occasional	None	None	Rare	Occasional	  Occasional	None
				Brief	Brief	Very			Very	Brief	Brief	
				Depth:	Depth:	brief			brief	Depth:	Depth:	
				0.3	0.3	Depth:			Depth:	0.3	0.3	
	1	1	1	1	I	0.3	1	1	0.3	1	1	1

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January   	February	March 	April	May   	June	July	August	September	October   	November	December
1448:	 	 	 		 	 	 	 		 		 
Woodslake	Occasional	Occasional	Occasional	Frequent	Frequent	Occasional	Occasional	Occasional	Occasional	Occasional	Occasional	Occasional
	Long	Long	Long	Long	Long	Long	Brief	Brief	Brief	Brief	Long	Long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:
	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
1449:	 	 	 		 	 	 	 		 		 
Grano	None	None	None	Occasional	Occasional	Occasional	Rare	Rare	Rare	Occasional	Occasional	None
	İ	İ	İ	Brief	Brief	Very	Very	Very	Very	Very	Brief	İ
	j	İ	ĺ	Depth:	Depth:	brief	brief	brief	brief	brief	Depth:	İ
				0.3	0.3	Depth:	Depth:	Depth:	Depth:	Depth:	0.3	
						0.3	0.2	0.2	0.2	0.2		
Percy	  None	  None	None	Occasional	Occasional	  Occasional	  None	None	Rare	  Rare	  Occasional	  None
	İ			Brief	Brief	Very	İ		Very	Very	Brief	
	İ	İ	İ	Depth:	Depth:	brief	İ	İ	brief	brief	Depth:	İ
	j	İ	ĺ	0.3	0.3	Depth:	İ	ĺ	Depth:	Depth:	0.3	İ
						0.3			0.3	0.3		
Augsburg	  None	  None	  None	Occasional	Occasional	  Occasional	  None	  None	Rare	  Occasional	  Occasional	  None
3	İ	İ		Brief	Brief	Very	İ		Very	Brief	Brief	
	İ	İ	İ	Depth:	Depth:	brief	İ	İ	brief	Depth:	Depth:	İ
	ĺ	ĺ	ĺ	0.3	0.3	Depth:	ĺ	ĺ	Depth:	0.3	0.3	ĺ
						0.3			0.3			
Woodslake	  Occasional	  Occasional	Occasional	Frequent	Frequent	  Occasional	  Occasional	Occasional	  Occasional	  Occasional	  Occasional	  Occasional
	Long	Long	Long	Long	Long	Long	Brief	Brief	Brief	Brief	Long	Long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:
	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
1807:	 	 	 		 	 	 	 		 		 
Cathro, ponded	Frequent	  Frequent	Frequent	  Frequent	Frequent	  Frequent	  Frequent	Frequent	  Frequent	  Frequent	  Frequent	  Frequent
cacinto, ponaca	Very long					Very long						
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:
	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Haug	000001	0000010001	Ogganional	Fromient	Frequent	  Frequent	  Rare	Rare	0000010001	Occasional	0000010001	0000010001
naug	Long	Long	Long	Long	Long	Frequent   Brief	Kare   Very	Kare   Very	Brief	Brief	Long	Occasional   Long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	very   brief	very   brief	Depth:	Depth:	Depth:	Depth:
	0.5	0.5	0.5	0.5	0.5	0.5	Depth:	Depth:	0.3	0.5	0.5	0.5
	1	1	1		1		0.3	0.3				

Map symbol and component name	January	February   	March   	April   	May   	June   	July   	August   	September   	October   	November   	December   
								ĺ	ĺ	ĺ		Ī
1807:							!					!
Seelyeville,							!		!			!
ponded	_							Frequent	Frequent			Frequent
	Very long											
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:
ļ	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
  Percy	None	  None	None	Occasional	  Occasional	  Occasional	  None	  None	  Rare	  Rare	  Occasional	  None
i				Brief	Brief	Very			Very	Very	Brief	
į		İ		Depth:	Depth:	brief	i	İ	brief	brief	Depth:	i
i				0.3	0.3	Depth:	i		Depth:	Depth:	0.3	İ
į		İ			İ	0.3	į	İ	0.3	0.3	İ	j
							!		!			
1808:   Markey, ponded	Fromient	  Frequent	Frequent	Frequent	  Frequent	  Frequent	  Frequent	Frequent	  Frequent	  Frequent	  Frequent	  Frequent
markey, ponded	Very long				Very long	Frequenc   Very long				Very long		
l I	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:
l I	1.0	Depth:   1.0	Depth:   1.0	Depth:   1.0	Depth:   1.0	Depth:   1.0	Depth:	Depth:   1.0	Depth:   1.0	Depth:   1.0	Depth:   1.0	Depth:
	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1 1.0
Leafriver	Occasional	Occasional	Occasional	Frequent	Frequent	Frequent	Rare	Rare	Occasional	Occasional	Occasional	Occasional
į	Long	Long	Long	Long	Long	Brief	Very	Very	Brief	Brief	Long	Long
į	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	Depth:	Depth:	Depth:	Depth:
į	0.5	0.5	0.5	0.5	0.5	0.5	Depth:	Depth:	0.3	0.5	0.5	0.5
İ		ĺ	ĺ	ĺ		ĺ	0.3	0.3	ĺ	İ	ĺ	ĺ
Seelyeville,		ļ			l	ļ		!	ļ	l	ļ	ļ
ponded	_	Frequent		Frequent	Frequent	Frequent	Frequent	Frequent	Frequent	Frequent	Frequent	Frequent
ļ	Very long				Very long							
I	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:
	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Cormant	None	  None	  None	Occasional	Occasional	Rare	None	None	None	Rare	  None	None
				Brief	Very	Very				Very		
i				Depth:	brief	brief	i		İ	brief		İ
i				0.3	Depth:	Depth:	i		İ	Depth:		İ
İ		İ			0.3	0.2	İ	İ	İ	0.2	İ	İ
į									<u> </u>			<u> </u>
1918:												
Croke	none	None	None	None	None	None	None	None	None	None	None	None
Augsburg	None	  None	  None	Occasional	Occasional	Occasional	None	  None	Rare	Occasional	Occasional	None
]	-			Brief	Brief	Very	İ		Very	Brief	Brief	İ
i				Depth:	Depth:	brief	i	İ	brief	Depth:	Depth:	İ
i		İ		0.3	0.3	Depth:	i	i	Depth:	0.3	0.3	İ
i i		i	· I	· I	' 	0.3	i	i	0.3	i		i

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February   	March   	April 	May   	June 	July   	August 	September 	October   	November   	December   
1918:		 	 	 	 		 			 	 	 
Grano	None	None       	None       	Occasional Brief Depth:	Occasional Brief Depth:	Occasional Very brief Depth:	Rare   Very   brief   Depth:   0.2	Rare   Very   brief   Depth:   0.2	Rare   Very   brief   Depth:   0.2	Occasional Very brief Depth:	Occasional   Brief   Depth:   0.3	None         
1923B:		i	 				 	ì			İ	
Garnes, very		İ	İ		İ		İ	j	j	İ	İ	İ
stony	None	None	None	None	None	None	None	None	None	None	None	None
Chilgren	None	  None     	  None   	Occasional Brief Depth:	Occasional Brief Depth:	Occasional Very brief Depth:	  None       	None     	Rare   Very   brief   Depth:   0.3	Rare   Very   brief   Depth:   0.3	Occasional Brief Depth:	  None       
Eckvoll	None	  None	  None	None	  None	None	  None	None	None	  None	  None	  None
Pelan	None	  None	  None	  None	  None	  None	  None	None	None	  None	  None	  None
1984:		 	 	 	 		 			 	 	 
Leafriver	Occasional	Occasional	Occasional	Frequent	Frequent	Frequent	Rare	Rare	Occasional	Occasional	Occasional	Occasiona
	Long	Long	Long	Long	Long	Brief	Very	Very	Brief	Brief	Long	Long
	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	Depth:	Depth:	Depth:	Depth:
	0.5	0.5	0.5	0.5	0.5	0.5	Depth:	Depth:	0.3	0.5	0.5	0.5
Cormant	None	  None     	  None     	Occasional Brief Depth:	Occasional Very brief Depth:	Rare   Very   brief   Depth:   0.2	  None     	None     	None	Rare   Very   brief   Depth:   0.2	  None     	  None       
Markey	Occasional	Occasional	Occasional	  Frequent	  Frequent	  Occasional	  Rare	Rare	Rare	Occasional	  Occasional	Occasiona
=	Long	Long	Long	Long	Long	Brief	Very	Very	Brief	Brief	Long	Long
j	Depth:	Depth:	Depth:	Depth:	Depth:	Depth:	brief	brief	Depth:	Depth:	Depth:	Depth:
	0.3	0.3	0.5	0.5	0.5	0.5	Depth:	Depth:	0.3	0.3	0.3	0.3
Redby	None	  None	  None	None	  None	None	  None	None	None	  None	  None	  None
<b>√:</b>		 	 	 	 		 			 	 	 
Water.		1	ı I	ı I				1	1		1	1

Table 29.--Soil Features

(See text for definitions of terms used in this table. Absence of an entry indicates that the feature is not a concern or that data were not estimated.)

		Subsid	lence		Risk of	corrosion
Map symbol and component name	Percent of	 		Potential   for	Uncoated	
	map unit	Initial	Total	frost action		Concrete
		In	In			[
47: Colvin	85	0		  High	  High	Low
Bearden	5	0		  High	  High	Low
Grano	5	   0		  High 	  High 	Low
Sax	5	2-8	2-12	  High 	  High 	  Moderate 
48B:		i i				
Hiwood	85	0		Moderate	Low 	Low
Redby	7	0		Moderate	Low	Low
Clearriver	3	0		Low	Low	Moderate
Cormant	3	0		Moderate	  High 	Low
Zimmerman	2	0		Low	Low	  High 
52:		j i		İ	İ	İ
Augsburg	85	0		High 	High 	Low
Croke	5	0		High	  High 	Low
Grano	5	0		  High 	  High 	Low
Sago	5	2-8	2-12	  High	  High 	Moderate
59:						İ
Grimstad	85	0		Moderate	  Moderate 	Low
Strathcona	12	0		  High 	  High 	Low
Foxhome	3	0		  High 	  Moderate 	Low
64:		i i		İ		İ
Ulen	85	0		Moderate	Low 	Low
Rosewood	10	0		Moderate	  High 	Low
Redby	3	0		Moderate	Low	Low
Rushlake	2	0		Moderate	Moderate	Low
65:		i i		İ	İ	i
Foxhome	85	0		High 	Moderate	Low
Strandquist	12	0		  High 	  High 	Low
Skagen	3	   0 		  High 	  High 	Low
67:						İ
Bearden	85	0		  High 	  High 	Low
Colvin	15	0   0		  High 	  High 	Low
			1	1	1	1

Table 29.--Soil Features--Continued

		Subsid	dence	Risk of corrosion			
Map symbol and	Percent			Potential			
component name	of map unit	  Initial	   Total	for frost action	Uncoated steel	   Concrete	
		In	In	Ī	İ	İ	
77: Garnes	85	   0	 	  High	  Moderate	Low	
Chilgren	   10	   0	   	  High	  High 	  Low	
Eckvoll	   3 	   0 	 	  High	  Moderate 	  Low 	
Pelan	   2	   0	 	  Moderate	  Moderate	  Low	
111:		 	 			 	
Hangaard	90	   0 	   	Moderate	  High 	Low	
Deerwood	5   5	2-8	   2-12 	Moderate	  High 	Low	
Rushlake	   3 	0	 	Moderate	  Moderate 	Low	
Rosewood	   2 	0	   	  Moderate	  High 	  Low 	
116:			! 				
Redby	85 	0 	 	Moderate	Low	Low	
Cormant	8 	0 	 	Moderate	High 	Low	
Hiwood	6 	0 	 	Moderate	Low	Low	
Leafriver	1 	2-8	2-12	High	High 	High 	
117:				İ	ĺ	İ	
Cormant	85 	0 	 	Moderate	High 	Low	
Leafriver	<b>7</b>	2-8	2-12 	High 	High 	High 	
Epoufette	3	0	   	High	  High 	  Moderate	
Redby	3	0	   	Moderate	Low	Low	
Grygla, depressional	2	0	   	High	  High 	Low	
133: Dalbo	85	     0	   	  High	    High	  Moderate	
		İ		į		į	
Mustinka		0 	 	High 	High 	Low	
Moranville	5 	0 	 	High 	Moderate	Low	
145: Enstrom	   85	   0	 	  Moderate	  Moderate	Low	
Grygla	   10	   0	 	  High	  High	Low	
Redby	   4	0	 	Moderate	Low	Low	
Pelan	1	0	 	  Moderate	  Moderate	Low	
147:	 		  -		 	 	
Spooner	85	0		  High	  High	Low	
Baudette	   5	   0	 	  High	  Moderate	Low	
Grygla	   5	   0	 	  High	  High 	  Low	
Sago	   5	2-8	   2-12	  High	  High 	  Moderate	
	l	1	l	I	I	I	

Table 29.--Soil Features--Continued

Map symbol and	Percent	Subsid	lence	   Potential	Risk of corrosion		
component name	of	    Initial	Total	for frost action	Uncoated steel	Concret	
		In	In				
158B:		j j		į	j	j	
Zimmerman	85	0   		Low	Low	High	
Hiwood	6	0		Moderate	Low	Low	
Two Inlets	6	0     0		Low	  Low	Low	
Redby	3	0     0		  Moderate	  Low	Low	
 167B:		 			 		
Baudette	85	0		High	  Moderate	Low	
Spooner	10	0     0		  High	  High 	Low	
Moranville	5	0     0		  High	  Moderate 	Low	
187:		 					
Haug	90	2-8	2-12	  High 	  High 	Low	
Percy	5	0		  High 	  High 	Low	
Cathro	3	2-12	12-45	  High	  High 	Low	
Boash	2	0		  High	  High	Low	
191:		 			 		
Epoufette	85	0		  High	  High 	Moderate	
Cormant	5			  Moderate	  High 	Low	
Leafriver	5	2-8   	2-12	  High	  High 	High	
Meehan	5	0     0		  Moderate	  Low	Moderate	
202:		 			 		
Meehan	85	0		Moderate	Low	Moderate	
Cormant	8	0     0		  Moderate	  High 	Low	
Wurtsmith	5	0		Low	Low	High	
Leafriver	2	2-8	2-12	  High	  High	High	
205 <b>:</b>		 			 		
Karlstad	85	0		Moderate	Low	Low	
Sahkahtay	7	0		Moderate	  High	Low	
  Marquette	5	   0		Low	  Low	Low	
Redby	2	   0		  Moderate	  Low	Low	
Pits, gravel	1	 					
242B:					 		
Z42B:     Marquette	85	   0		Low	  Low	Low	
				  Moderate	Low	  Torr	
Karlstad	14	0		Moderace	LOW	Low	

Table 29.--Soil Features--Continued

Map symbol and	Percent	Subsid	dence	   Potential		corrosion
component name	of map unit	  Initial	Total	for frost action	Uncoated steel	Concrete
		In	In			
280: Pelan	85	   0	 	  Moderate	  Moderate	Low
Strandquist	   10	   0 	   	  High 	  High 	  Low 
Garnes	3	   0 		  High 	  Moderate 	Low
Marquette	1	   0 	   	Low	Low	Low
Pits, gravel	1	   	   		 	i
379:		İ	! 	İ		i
Percy, very cobbly	90	   0 	   	  High 	  High 	Low
Boash	3	   0 	 	  High 	  High 	Low
Strandquist	3	0 	   	  High 	  High 	Low
Haug	2	2-8	2-12	  High 	  High 	Low
Skagen, very cobbly	2	0 		  High 	  High 	Low
383:		ĺ		ĺ	İ	ĺ
Percy	90	0 	 	High 	High 	Low
Boash	3	0		High	High	Low
Strandquist	3	   0	 	  High	  High	Low
Haug	   2	   2-8	   2-12	  High 	  High 	  Low
Skagen	   2 	   0 	   	  High 	  High 	  Low 
384:			   			 
Percy, depressional	85 	0		High	High	Low
Haug	   7 	   2-8 	   2-12 	  High 	  High 	Low
Percy	5	   0 		  High 	  High 	Low
Boash	3	   0 	   	  High 	  High 	Low
387:		İ	İ	İ	İ	į
Roliss, depressional	85	0	 	High 	High 	Low
Haug	10	2-8	2-12	High 	High 	Low
Roliss	5 	0 	 	High 	High 	Low
404:		ļ		ļ	!	!
Chilgren	85	0 		High 	High 	Low
Garnes	5	0 		High 	Moderate	Low
Grygla	İ	0 		High 	High 	Low
Haug	5	2-8 	2-12	High 	High 	Low
412:						
Mavie	85	0 	 	High 	High 	Low
Foxhome	5	0		High	Moderate	Low

Table 29.--Soil Features--Continued

Map symbol and	Percent	Subsic	dence	Risk of corrosion			
component name	of	    -		for	Uncoated		
	map unit	:		frost action	steel	Concrete	
44.0		In	In				
412: Northwood	   5 	   2-8 	   2-12 	  High 	  High 	  Low 	
Percy, very cobbly	5 	   0 	   	  High 	  High 	Low	
432:	İ	j	İ	İ	İ	İ	
Strandquist	85	0 	 	High	  High 	Low	
Percy, very cobbly	5 	0 	 	High 	High 	Low	
Haug	<b>4</b> 	2-8	2-12	High 	High 	Low	
Boash	3 	0 	 	High 	High 	Low	
Foxhome	3	0	 	High	  Moderate	Low	
433:	İ	j	İ	İ	İ	İ	
Syrene, depressional	85	0	 	Moderate	  High 	Low	
Deerwood	5	2-8	2-12	Moderate	High 	Low	
Rosewood	5 	0 	 	Moderate	High 	Low	
Syrene	5	0		Moderate	  High 	Low	
435:	İ	j	İ	İ	İ	İ	
Syrene	85	0	 	Moderate	  High 	Low	
Rosewood	5	0		Moderate	  High 	Low	
Syrene, depressional	5	0		Moderate	  High 	Low	
Karlsruhe	3	   0 		Moderate	  High 	Low	
Deerwood	2   2	2-8	2-12	Moderate	  High 	Low	
439:		İ		İ	İ	İ	
Strathcona	85	0	 	High	  High 	Low	
Northwood	5	2-8	2-12	High	  High 	Low	
Percy	5	0	 	High	  High 	Low	
Grimstad	3	0		Moderate	  Moderate 	Low	
Strandquist	2	0		  High 	  High 	Low	
481:	! 	i İ	i	İ		i	
Kratka	85	   0 	 	Moderate	  High 	Low	
Northwood	5	2-8	2-12	  High 	  High 	Low	
Percy	5	0		  High	  High 	Low	
Enstrom	3	   0 		  Moderate	  Moderate 	Low	
Strandquist	   2 	   0 	 	  High 	  High 	  Low 	
482:	 	 	 		I I	I I	
Grygla	   85 	   0 	 	  High 	  High 	  Low 	
Chilgren	   5 	   0 	 	  High 	  High 	  Low 	
	ı	1	1	I	I .	I	

Table 29.--Soil Features--Continued

Map symbol and	Percent	Subsid	dence	   Potential	Risk of corrosion		
component name	of	    Tnitiol	     Total	for frost action	Uncoated steel	Congrete	
	map unit	:	<del>.</del>	TIOST ACTION	steer	Concrete	
482:	 	In	In		 	l I	
Grygla, depressional	   5 	   0 	   	  High 	  High 	  Low 	
Enstrom	   3 	   0 	   	Moderate	  Moderate 	Low	
Northwood	2   2	2-8	   2-12 	High	  High 	Low	
532:	İ	İ	İ		İ	i	
Sago	90	2-8	2-12	High	  High 	Moderate	
Cathro	5 	2-12	12-45	High	High 	Low	
Zippel	5 	0 	 	High 	High 	Low	
534:							
Mooselake	90	2-12 	6-45 	High 	High 	High 	
Bullwinkle	4	2-12	12-45		High 	Moderate	
Dora	3	2-12	İ	High 	High 	Moderate	
Tawas	3	2-12	12-45 	High 	High 	Moderate	
540: Seelyeville	   90	   2-12	   12-50	  High	  High 	  Moderate	
Cathro	   <b>4</b> 	   2-12 	   12-45 	  High 	  High 	  Low 	
Dora	   3 	2-12	   12-45 	High	  High 	Moderate	
Markey	3 	2-12	12-45	High 	  High 	Low	
541: Rifle	   90 	   2-12 	   6-45 	  High 	  High 	  Low 	
Tacoosh	10   10	2-12	   6-45 	High	  High 	  Moderate 	
543:	İ	İ	İ		İ	i	
Markey	90	2-12	12-45	High 	  High 	Low	
Cormant	5 	0 	 	Moderate	High 	Low	
Seelyeville	5	2-12	12-50 	High 	High 	Moderate	
544: Cathro	   90	   2-12	   12-45	  High	  High 	  Low	
Percy, very cobbly	   4 	   0 	   	  High	  High 	  Low 	
Grygla	   3 	   0 	   	  High 	  High 	  Low 	
Seelyeville	   3 	2-12	   12-50 	  High 	  High 	Moderate	
546:	İ	j	İ	İ	İ	į	
Lupton	90	2-12	   12-50 	High	  High 	Low	
Bullwinkle	4   4	2-12	12-45	High 	  High 	Moderate	
Dora	3	2-12	12-45	High 	High 	Moderate	
Tawas	3 	2-12 	12-45 	High 	High 	Moderate 	

Table 29.--Soil Features--Continued

		Subsid	dence	Risk of corrosion			
Map symbol and	Percent			Potential			
component name	of map unit	  Initial	   Total	for for frost action	Uncoated steel	Concrete	
		In	In				
547: Deerwood	90	2-8	2-12	  Moderate	  High	Low	
Markey	4	2-12	   12-45 	  High 	  High 	  Low 	
Rosewood	3	0		  Moderate 	  High 	Low	
Syrene	3	0		  Moderate 	  High 	Low	
550: Dora	90	2-12	12-45	    High	    High	  Moderate	
Boash	4	0		  High	  High 	Low	
Seelyeville	3	2-12	12-50	  High	  High 	  Moderate	
Woodslake	   3 	   0 	   	  Moderate 	  High 	  Low 	
561: Bullwinkle	90	2-12	12-45	    High	    High	    Moderate	
Lupton	4	2-12	12-50	  High	  High	Low	
Northwood, wooded	   4	2-8	2-12	  High	  High	Low	
Chilgren	   2	   0 	   	  High 	  High	  Low	
563: Northwood	90	2-8	2-12	    High	    High	    Low	
Grygla	4	0		  High	  High	Low	
Berner	3	2-12	12-45	  High	  High	  Moderate	
Strandquist	3	   0 	   	  High 	  High	  Low	
565: Eckvoll	     85	     0	   	    High 	    Moderate 	    Low 	
Chilgren	5	   0 	 	  High 	  High 	Low	
Grygla	5	   0 		  High 	  High 	Low	
Hiwood	5	   0 	   	  Moderate 	Low	Low	
568: Zippel	85	   0	 	  High	  High	  Low	
Augsburg, depressional-	5	0		  High 	  High 	Low	
Sago	5	2-8	2-12	  High 	  High 	  Moderate 	
Skime	5   5	   0 	 	  Moderate 	  Low 	  Low 	
569: Wabanica	     85	     0	   	    High 	    High 	    Low 	
Warroad	   6	   0 	 	  High 	  High 	Low	
Sax	   4 	2-8	   2-12 	  High 	  High 	  Moderate 	
Grano	3	   0 	 	  High 	  High 	  Low 	
Enstrom	2	0	   	  Moderate 	  Moderate 	Low	

Table 29.--Soil Features--Continued

Map symbol and component name	Percent of				I .	
component name				Potential   for	Uncoated	1
	map unit	Initial	Total	frost action	!	Concrete
I		In	In	I	l	I
570:   Faunce	85	0		Low	Low	  Moderate
Clearriver	7	0		Low	  Low	  Moderate
Zimmerman	4	0		Low	  Low 	  High 
Meehan	3	0		  Moderate	  Low 	  Moderate 
Pits, gravel	1				   	 
581:						İ
Percy	90	0		High	  High 	Low
Haug	5	2-8	2-12	High	  High 	Low
Boash	3	0		High	  High 	Low
Skagen	2	0		High	  High 	Low
582:				İ	İ	j
Roliss	85	0		High 	High 	Low
Roliss, depressional	7	0		High	High 	Low
Boash	5	0		High	  High 	Low
Haug	3	2-8	2-12	High	  High 	Low
583:		İ	İ	İ	j	İ
Nereson	85	0		High 	Moderate	Low
Percy	10	0		High 	High 	Low
Pelan	3	0		Moderate	Moderate	Low
Foxhome	2	0		High	  Moderate 	Low
627:   Tawas	90	2-12	12-45	  High	    High	Moderate
Leafriver	4	2-8			    High	  High
Lupton	4	2-12	12-50		    High	Low
Cormant	2	0		ĺ	    High	Low
	·				İ	İ
630:	90	2-8	2-12	  High	  High	Low
   Boash	4	0		  High	  High	Low
    	4	2-12	12-45	  High	  High	Moderate
Espelie	2	0		  High	  High	Low
643.						
643:     Huot	85	0		  High	  High 	  Low
Thiefriver	12	0		  High	  High 	  Low 
Redby	3	0		  Moderate	  Low 	  Low 

Table 29.--Soil Features--Continued

	Subsidence				Risk of corrosion	
Map symbol and component name	Percent of	 		Potential   for	Uncoated	<u> </u>
	map unit			frost action	steel	Concrete
644		In	In			
644: Boash	   85 	   0 	   	  High 	  High 	  Low 
Percy	7	   0 	   	  High 	  High 	Low
Woodslake	5	   0 		Moderate	  High 	Low
Strandquist	3	   0 	   	  High 	  High 	Low
645:		İ		i		<u> </u>
Espelie	85	0 	 	  High 	  High 	Low
Grano	5	0 		High	  High 	Low
Hilaire	5	,   0 		  High 	  Moderate 	Low
Wildwood	5	2-8	2-12	  High 	  High 	Low
651:		İ		i	İ	į
Thiefriver	85	0   	   	  High 	  High 	Low
Grano	5	0 		  High 	  High 	Low
Huot	5	0 		High	  High 	Low
Wildwood	5	2-8	2-12	High	  High 	Low
708:		İ		İ	İ	İ
Rushlake	85	0 	   	Moderate	  Moderate 	Low
Corliss	6	0   	   	Low	Low	Low
Redby	5	0 		Moderate	Low	Low
Hangaard	3	0 		Moderate	  High 	Low
Pits, gravel	1	i I		i	   	i I
712:		İ	İ	İ	İ	İ
Rosewood	85	0	 	Moderate	High 	Low
Deerwood	6 	2-8	2-12	Moderate	High 	Low
Hangaard	5 	0 		Moderate	High 	Low
Ulen	<b>4</b> 	0 		Moderate	Low	Low
721B:		ļ		ļ.	ļ	
Corliss	85	0 		Low	Low	Low
Rushlake	10 	0 	 	Moderate	Moderate 	Low
Hangaard	4 	0 	 	Moderate	High 	Low 
Pits, gravel	1 	 	 		 	 
733:						
Berner	90	2-12	12-45	High 	High 	Moderate
Grygla	5	0	 	High 	High 	Low
Seelyeville	5	2-12	12-50	High 	High 	Moderate

Table 29.--Soil Features--Continued

Map symbol and	Percent	Subsidence		Potential	Risk of corrosion	
component name	of			for	Uncoated	
	map unit	Initial   In	Total In	frost action	steel	Concrete
737:		III	ın	 	 	 
Mahkonce	85	0		  High 	  High 	Low
Auganaush	10	0		  High 	  High 	Moderate
Eckvoll	5	0		  High 	Moderate	Low
755: Woodslake	85	0		  Moderate	  High	  Low
Boash	8	0		  High 	  High 	Low
Wildwood	5	2-8	2-12	  High 	  High 	  Low 
Dora	2	2-12	12-45	  High 	  High 	  Moderate
767: Auganaush	90	0		    High 	    High 	    Moderate 
Mustinka	5	0		  High 	  High 	Low
Wildwood	3	2-8	2-12	  High 	  High 	Low
Mahkonce	2	0		  High 	  High 	Low
794: Clearriver	85	0		  Low	  Low	  Moderate
Hiwood	7	0		  Moderate 	  Low 	Low
Meehan	5	0		  Moderate	  Low	  Moderate
Faunce	3	0		  Low	  Low	  Moderate
1002:				 	 	 
Fluvaquents, frequently flooded		0		  High	  High	  Low
Seelyeville	6	2-12	12-50	  High	  High 	  Moderate
Hapludalfs	2	0		  High	  Moderate	  Low
Water	2			 	 	 
1030: Pits, gravel	75			   	   	   
Udipsamments	20	0		Low	Low	Low
Corliss	2	0		Low	Low	Low
Karlstad	2	0		  Moderate	  Low	  Low
Hangaard	1	0		  Moderate	  High 	  Low
1031: Seelyeville, ponded	90	2-12	12-50	    High	    High	    Moderate
Cathro	4	2-12	12-45	  High	  High	  Low
Dora	3	2-12	12-45	  High	  High	  Moderate
Markey	3	   2-12 	12-45	  High 	  High 	   Low 

Table 29.--Soil Features--Continued

		Risk of corrosion				
Map symbol and	Percent	Subsic	dence	Potential		
component name	of map unit	  Tnitial	   Total	for frost action	Uncoated steel	Concrete
	map unit	In	In		Sceel	Concrete
1067:				ì	! 	
Fluvaquents, frequently		ĺ	ĺ	İ		İ
flooded	60	0		High	High	Low
Hapludalfs	30	   0	 	  High	  Moderate	Low
Seelyeville	   5	2-12	   12-50	  High	  High	  Moderate 
Water	   5 	   	   		   	   
1133B:		İ	! 			
Skime	85	0	i	Moderate	Low	Low
Hiwood	   10	   0	 	  Moderate	  Low	  Low
	_					
Zippel	5 	0 	 	High 	High 	Low
1134:				ĺ	ĺ	ĺ
Borup	55 	0 	 	High 	High 	Low
Glyndon	35	0		High	  High	Low
Augsburg, depressional-	5	0		  High	  High	Low
Skime	   5	   0	 	  Moderate	  Low	Low
1144:	 	 	 	}	 	 
Strathcona,		! 	 		 	
depressional	45	0		High	High	Low
Kratka, depressional	   45	   0 	   	  Moderate	  High 	  Low 
Kratka	   5	0	 	  Moderate	  High 	Low
Northwood	   5	2-8	   2-12 	  High	  High 	Low
1154:		 	 		 	 
Sax	90	2-8	2-12	  High	  High 	  Moderate
Wabanica	5	0	 	  High	  High 	Low
Cathro	   3	2-12	   12-45 	  High	  High 	  Low
Woodslake	   2 	0	 	Moderate	  High 	Low
1158:				İ		
Skagen	85	0		High	High	Low
Percy	10	   0	 	  High	  High	Low
Foxhome	   5	   0	 	  High	  Moderate	Low
1170:	 	 	 	1	l I	 
Skagen, very cobbly	85	0		  High	  High	Low
Percy, very cobbly	10	   0	 	  High	  High	  Low
Foxhome	   5	   0	 	  High	  Moderate	  Low
1179B:	 	 	 	1	l I	I I
Moranville	   85	   0	 	  High	  Moderate	  Low
Baudette	   5	   0	 	  High	  Moderate	  Low
	I	I	I	I	I	I

Table 29.--Soil Features--Continued

Map symbol and	Percent	Subsidence   ercent		   Potential	Risk of corrosion		
component name	of			for	Uncoated		
_	map unit	Initial	Total	frost action	steel	Concrete	
		In	In				
1179B:							
Hiwood	5	0		Moderate	Low	Low	
Spooner	5	   0	 	  High	  High	Low	
1181:		 			 		
Rosewood	50	   0 	 	  Moderate	  High 	  Low 	
Ulen	40	   0 		  Moderate 	  Low 	  Low 	
Redby	5	0 		Moderate	Low	Low	
Deerwood	3	2-8	2-12	Moderate	  High 	Low	
Syrene	2	0 	 	Moderate	High	Low	
1182:							
Warroad	85	0 	 	High 	High 	Low	
Wabanica	7	0		High 	High 	Low	
Enstrom	5	0 		Moderate	Moderate 	Low	
Sax	3	2-8	2-12 	High 	High 	Moderate	
1187:						!	
Dora, ponded		2-12 	12-45 	High 	High 	Low	
Seelyeville, ponded	4	2-12	12-50 	High 	High 	Moderate	
Wildwood	4	2-8	2-12	High 	High 	Low	
Boash	2	0 	 	High 	High 	Low	
1191:						!	
Sahkahtay	85	0 		Moderate 	High 	Low	
Cormant	5	0 	 	Moderate	High 	Low	
Deerwood	5	2-8	2-12	Moderate	High 	Low	
Karlstad	3	0 	 	Moderate	Low 	Low	
Redby	2	0 	 	Moderate	Low 	Low	
1206:				[			
Cormant	55	0 		Moderate	High 	Low	
Redby	35	   0 		Moderate	Low	Low	
Hiwood	5	   0 		Moderate	Low	Low	
Leafriver	5	2-8	2-12	  High 	  High 	  High 	
1214: Mustinka	90	     0	 	    High	    High	Low	
Espelie	4	     0	 	    High	    High	Low	
Wildwood	4	2-8	     2-12	    High	    High	Low	
					İ	į	
Dalbo	2	0 	 	High 	High 	Moderate	

Table 29.--Soil Features--Continued

Map symbol and	Percent	Subsid	lence	   Potential	Risk of	corrosion
component name	of			for	Uncoated	
	map unit	Initial In	Total In	frost action	steel	Concret
1274B:		111	111		 	
Redby	40	0		Moderate	Low	Low
Hiwood	30	0		Moderate	Low	Low
Leafriver, wooded	15	2-8	2-12	  High	  High	  High
Clearriver	5	0		Low	Low	  Moderate
 	5	0		Moderate	  High	Low
Zimmerman	5	0		Low	Low	  High
 1298:		 			 	 
Borup	90	0		High	  High	Low
Augsburg, depressional-	3	0		  High	  High	Low
Glyndon	3	0		  High	    High	Low
Sago	2	2-8	2-12	  High	    High	Moderate
Skime	2	0		Moderate	Low	Low
				İ		İ
1302:     Foldahl	85	0		  High	  Moderate	Low
   Kratka	10	0		  Moderate	  High	Low
Foxhome	5	0		  High	  Moderate	Low
1304:					 	 
Glyndon	85	0		High	  High 	Low
Borup	10	0		  High	  High 	Low
Skime	5	0		Moderate	  Low	Low
1305:					 	 
Hilaire	85	0		High	Moderate	Low
Espelie	11	0		High	  High 	Low
Grano	2	0		  High	  High 	Low
Redby	2	0		  Moderate	  Low 	Low
1314:						
Tacoosh	90	2-12	6-45	High	  High 	Moderate
Rifle	8	2-12	6-45	High	  High 	Low
Sax	2	2-8	2-12	  High 	  High 	  Moderate 
1316:						
Wheatville	85	0		High	High	Low
Augsburg	13	0		High	High	Low

Table 29.--Soil Features--Continued

	Subsidence				Risk of corrosion	
Map symbol and component name	Percent of	 		Potential   for	 Uncoated	
	map unit	Initial	Total	frost action	steel	Concrete
1326:		In	In	l I		 
Augsburg, depressional-	45	   0 		  High 	  High 	  Low 
Wabanica, depressional-	45	   0 	   	  High 	  High	Low
Sax	6	2-8	2-12	  High 	High	Moderate
Espelie	2	0		High	High	Low
Zippel	2	0		High	High	Low
1327B: Karlstad	   65 	   0	 	  Moderate	Low	  Low 
Marquette	25	0		Low	Low	Low
Sahkahtay	7	0		Moderate	  High	Low
Redby	3	0		Moderate	Low	Low
1328: Northwood, wooded	90	2-8	2-12	  High	High	Low
Berner, wooded	5	2-12	12-45	  High	  High	  Moderate
Grygla	   5	   0	 	  High	  High	  Low
1333: Dora, wooded	     90	     2-12	     12-45	    High	    High	    Moderate
Lupton	   4	2-12	12-50	  High	  High	Low
Wildwood	   4	2-8	2-12	  High	  High	  Low
Auganaush	   2 	   0 		  High 	  High 	  Moderate 
1356: Water, miscellaneous.	   	     		     		   
1399B: Two Inlets	     85	     0	   	  -  Low	Low	    Low
Wurtsmith	63     6	0     0		Low	Low	High
				į		
Zimmerman	6     3	0     0	   	Low    Moderate	Low    Low	High    Moderate
				Moderace	LIOW	Moderace
1401: Grygla, depressional	   90 	   0 	 	  High 	  High	  Low 
Northwood, wooded	5	2-8	2-12	  High	  High	Low
Chilgren	   3 	   0 	 	  High 	  High 	  Low 
Grygla	   2 	   0 	 	  High 	  High 	  Low 
1402: Leafriver, wooded	     90	     2-8 	     2-12 	    High 	    High	    High 
Cormant	   4 	0		  Moderate 	  High	  Low 

Table 29.--Soil Features--Continued

Subsidence Risk of corrosion							
Map symbol and	   Percent	Subsid	dence	   Potential	i	Risk of corrosion	
component name	of		 	for	Uncoated		
	map unit	:		frost action	steel	Concrete	
1402:		In	In				
Tawas	   4 	   2-12 	   12-45 	  High 	  High 	  Moderate 	
Redby	2   2	0	 	  Moderate 	Low	Low	
1404:	İ	Ì		İ	İ	İ	
Berner, wooded	90	2-12	12-45	High 	High 	Moderate	
Lupton	<b>4</b> 	2-12 	12-50 	High 	High 	Low	
Northwood, wooded	<b>4</b> 	2-8	2-12 	High 	High 	Low	
Grygla	2 	0 	 	High 	High 	Low	
1405:							
Lallie		0		High 	High 	High 	
Sax		2-8		High 	High 	Moderate	
Wabanica	3	0		High 	High 	Low	
1414:						1-	
Nereson, very cobbly	İ	0		High 	Moderate	Low	
Percy, very cobbly	10     3	0     0	   	High    Moderate	High    Moderate	Low Low	
Foxhome	3     2	0     0		Moderate    High	Moderate     Moderate	Low	
1428:	<b>2</b>   	0	   	High	Moderate	 	
Karlsruhe	   85 	   0 		  Moderate	  High 	  Low 	
Syrene	1   10 	0		  Moderate 	  High 	Low	
Ulen	   5 	0		Moderate	Low	Low	
1444:		İ			i	İ	
Wurtsmith	85 	,   0 		Low	Low	High	
Meehan	10	0		Moderate	Low	Moderate	
Clearriver	2 	0 	 	Low	Low	Moderate	
Two Inlets	2 	0 	 	Low	Low	Low	
Cormant	1 	0 	 	Moderate	High 	Low	
1448:							
Grano		0		į	High	Low	
Percy	İ	0		į	High	Low	
Augsburg	3 	0 	 	High 	High 	Low	
Woodslake	2	0 	 	Moderate	High 	Low	
1449:				[	I		
Grano	90	0	 	High 	  High 	Low	
Percy	5	0	 	High 	High 	Low	

Table 29.--Soil Features--Continued

Map symbol and	Percent	Subsid	lence	Potential	Risk of	corrosion
component name	of			for	Uncoated	<u> </u>
•	map unit	Initial	Total	frost action	steel	Concrete
		In	In	1		
1449:						
Augsburg	3	0		High	High	Low
Woodslake	2	0		  Moderate	  High 	  Low 
1807:					 	! 
Cathro, ponded	90	2-12	12-45	High	High	Low
Haug	4	2-8	2-12	  High	  High	Low
Seelyeville, ponded	4	2-12	12-50	  High	  High	  Moderate
Percy	2	0		  High	  High	  Low
1808:					 	 
Markey, ponded	90	2-12	12-45	  High	  High	Low
Leafriver	4	2-8	2-12	  High	  High 	  High 
Seelyeville, ponded	4	2-12	12-50	  High	  High 	  Moderate 
Cormant	2	0		  Moderate	  High 	  Low 
1918:					 	 
Croke	85	0		High	High	Low
Augsburg	13	0		  High	  High 	  Low 
Grano	2	0		  High	  High 	  Low 
1923B:					 	! 
Garnes, very stony	85	0		High	Moderate	Low
Chilgren	10	0		  High	  High 	  Low
Eckvoll	3	0		  High	  Moderate	Low
Pelan	2	0		Moderate	  Moderate	  Low
1984:					 	1 
Leafriver	90	2-8	2-12	  High	  High 	  High 
Cormant	5	0		  Moderate	  High 	  Low 
Markey	3	2-12	12-45	  High 	  High 	  Low 
Redby	2	0		  Moderate 	  Low 	  Low 
W: Water.					     	     

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## **Glossary**

- **Ablation till.** Loose, permeable till deposited during the final downwasting of glacial ice. Lenses of crudely sorted sand and gravel are common.
- Aeration, soil. The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.
- **Aggregate, soil.** Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.
- **Alluvium.** Material, such as sand, silt, or clay, deposited on land by streams.
- Alpha,alpha-dipyridyl. A dye that when dissolved in 1N ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction indicates a type of redoximorphic feature.
- **Animal unit month (AUM).** The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.
- **Aquic conditions.** Current soil wetness characterized by saturation, reduction, and redoximorphic features.
- **Area reclaim** (in tables). An area difficult to reclaim after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.
- **Argillic horizon.** A subsoil horizon characterized by an accumulation of illuvial clay.
- **Aspect.** The direction in which a slope faces.
- **Association, soil.** A group of soils or miscellaneous areas geographically associated in a characteristic repeating pattern and defined and delineated as a single map unit.
- Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in

inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low	0 to 3
Low	3 to 6
Moderate	6 to 9
High	9 to 12
Very high	more than 12

- **Backslope.** The position that forms the steepest and generally linear, middle portion of a hillslope. In profile, backslopes are commonly bounded by a convex shoulder above and a concave footslope below
- **Basal till.** Compact glacial till deposited beneath the ice.
- Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.
- Base slope. A geomorphic component of hills consisting of the concave to linear (perpendicular to the contour) slope that, regardless of the lateral shape, forms an apron or wedge at the bottom of a hillside dominated by colluvium and slope-wash sediments (for example, slope alluvium).
- **Beach deposits.** Material, such as sand and gravel, that is generally laid down parallel to an active or relict shoreline of a postglacial or glacial lake.
- Beach ridge. A low, essentially continuous mound of beach or beach-and-dune material heaped up by the action of waves and currents on the backshore of a beach, beyond the present limit of storm waves or the reach of ordinary tides, and occurring singly or as one of a series of approximately parallel deposits. The ridges are roughly parallel to the shoreline and represent successive positions of an advancing shoreline.
- **Bedding planes.** Fine strata, less than 5 millimeters thick, in unconsolidated alluvial, eolian, lacustrine, or marine sediment.
- **Bedrock.** The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

- **Bedrock-controlled topography.** A landscape where the configuration and relief of the landforms are determined or strongly influenced by the underlying bedrock.
- **Bench terrace.** A raised, level or nearly level strip of earth constructed on or nearly on a contour, supported by a barrier of rocks or similar material, and designed to make the soil suitable for tillage and to prevent accelerated erosion.
- **Bisequum.** Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.
- Blowout. A shallow depression from which all or most of the soil material has been removed by the wind. A blowout has a flat or irregular floor formed by a resistant layer or by an accumulation of pebbles or cobbles. In some blowouts the water table is exposed.
- **Bog.** Waterlogged, spongy ground consisting primarily of mosses and containing acidic, decaying vegetation, such as sphagnum, sedges, and heaths, that develops into peat.
- **Boulders.** Rock fragments larger than 2 feet (60 centimeters) in diameter.
- Brush management. Use of mechanical, chemical, or biological methods to make conditions favorable for reseeding or to reduce or eliminate competition from woody vegetation and thus allow understory grasses and forbs to recover. Brush management increases forage production and thus reduces the hazard of erosion. It can improve the habitat for some species of wildlife.
- **Calcareous soil.** A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.
- **Canopy.** The leafy crown of trees or shrubs. (See Crown.)
- **Capillary water.** Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.
- **Catena.** A sequence, or "chain," of soils on a landscape that formed in similar kinds of parent material but have different characteristics as a result of differences in relief and drainage.
- **Cation.** An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.
- Cation-exchange capacity. The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to

- soils, is synonymous with base-exchange capacity but is more precise in meaning.
- **Catsteps.** Very small, irregular terraces on steep hillsides, especially in pasture, formed by the trampling of cattle or the slippage of saturated soil.
- Channery soil material. Soil material that has, by volume, 15 to 35 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches (15 centimeters) along the longest axis. A single piece is called a channer.
- **Chemical treatment.** Control of unwanted vegetation through the use of chemicals.
- **Chiseling.** Tillage with an implement having one or more soil-penetrating points that shatter or loosen hard, compacted layers to a depth below normal plow depth.
- Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.
- Clay depletions. Low-chroma zones having a low content of iron, manganese, and clay because of the chemical reduction of iron and manganese and the removal of iron, manganese, and clay. A type of redoximorphic depletion.
- Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.
- Claypan. A slowly permeable soil horizon that contains much more clay than the horizons above it. A claypan is commonly hard when dry and plastic or stiff when wet.
- Climax plant community. The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.
- Coarse textured soil. Sand or loamy sand.
- **Cobble (or cobblestone).** A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.
- Cobbly soil material. Material that has 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.6 to 25 centimeters) in diameter. Very cobbly soil material has 35 to 60 percent of these rock fragments, and extremely cobbly soil material has more than 60 percent.
- **COLE** (coefficient of linear extensibility). See Linear extensibility.
- **Colluvium.** Soil material or rock fragments, or both, moved by creep, slide, or local wash and deposited at the base of steep slopes.
- Complex slope. Irregular or variable slope. Planning

- or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.
- Complex, soil. A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.
- Concretions. Cemented bodies with crude internal symmetry organized around a point, a line, or a plane. They typically take the form of concentric layers visible to the naked eye. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up concretions. If formed in place, concretions of iron oxide or manganese oxide are generally considered a type of redoximorphic concentration.
- Conservation cropping system. Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.
- **Conservation tillage.** A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.
- Consistence, soil. Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the "Soil Survey Manual."
- **Contour stripcropping.** Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.
- **Control section.** The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

- **Coprogenous earth (sedimentary peat).** Fecal material deposited in water by aquatic organisms.
- **Corrosion.** Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.
- **Cover crop.** A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.
- **Cropping system.** Growing crops according to a planned system of rotation and management practices.
- **Crop residue management.** Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.
- **Cross-slope farming.** Deliberately conducting farming operations on sloping farmland in such a way that tillage is across the general slope.
- **Crown.** The upper part of a tree or shrub, including the living branches and their foliage.
- **Cutbanks cave** (in tables). The walls of excavations tend to cave in or slough.
- **Deferred grazing.** Postponing grazing or resting grazing land for a prescribed period.
- **Delta.** A body of alluvium having a surface that is nearly flat and fan shaped; deposited at or near the mouth of a river or stream where it enters a body of relatively quiet water, generally a sea or lake
- **Depression.** Any relatively sunken part of the earth's surface; especially a low-lying area surrounded by higher ground. A closed depression has no natural outlet for surface drainage. An open depression has a natural outlet for surface drainage.
- **Depth, soil.** Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.
- **Diversion (or diversion terrace).** A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.
- Drainage class (natural). Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized—excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained, and

very poorly drained. These classes are defined in the "Soil Survey Manual."

- **Drainage, surface.** Runoff, or surface flow of water, from an area.
- **Drainageway.** Relatively small, linear depressions that, at some time, move concentrated water and either do not have a defined channel or have only a small defined channel.
- **Drumlin.** A low, smooth, elongated oval hill, mound, or ridge of compact glacial till. The longer axis is parallel to the path of the glacier and commonly has a blunt nose pointing in the direction from which the ice approached.
- **Duff.** A generally firm organic layer on the surface of mineral soils. It consists of fallen plant material that is in the process of decomposition and includes everything from the litter on the surface to underlying pure humus.
- **Eluviation.** The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.
- **Endosaturation.** A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.
- **Eolian soil material.** Earthy parent material accumulated through wind action; commonly refers to sandy material in dunes or to loess in blankets on the surface.
- **Ephemeral stream.** A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is above the water table at all times.
- **Episaturation.** A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.
- **Erosion.** The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep. *Erosion* (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.
  - Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.

- **Erosion pavement.** A layer of gravel or stones that remains on the surface after fine particles are removed by sheet or rill erosion.
- **Escarpment.** A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. Synonym: scarp.
- **Esker.** A narrow, winding ridge of stratified gravelly and sandy drift deposited by a stream flowing in a tunnel beneath a glacier.
- **Excess fines** (in tables). Excess silt and clay in the soil. The soil does not provide a source of gravel or sand for construction purposes.
- **Excess salt** (in tables). Excess water-soluble salts in the soil restrict the growth of most plants.
- **Fan terrace.** A relict alluvial fan, no longer a site of active deposition, incised by younger and lower alluvial surfaces.
- Fast intake (in tables). The rapid movement of water into the soil.
- **Fertility, soil.** The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.
- Fibric soil material (peat). The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.
- **Field moisture capacity.** The moisture content of a soil, expressed as a percentage of the ovendry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity, normal moisture capacity,* or *capillary capacity.*
- Fine textured soil. Sandy clay, silty clay, or clay.

  Firebreak. An area cleared of flammable material to stop or help control creeping or running fires. It also serves as a line from which to work and to facilitate the movement of firefighters and equipment. Designated roads also serve as firebreaks.
- **First bottom.** The normal flood plain of a stream, subject to frequent or occasional flooding.
- Flaggy soil material. Material that has, by volume, 15 to 35 percent flagstones. Very flaggy soil material has 35 to 60 percent flagstones, and extremely flaggy soil material has more than 60 percent flagstones.

- **Flagstone.** A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist 6 to 15 inches (15 to 38 centimeters) long.
- **Flood plain.** A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.
- **Fluvial.** Of or pertaining to rivers; produced by river action, as a fluvial plain.
- **Footslope.** The position that forms the inner, gently inclined surface at the base of a hillslope. In profile, footslopes are commonly concave. A footslope is a transition zone between upslope sites of erosion and transport (shoulders and backslopes) and downslope sites of deposition (toeslopes).
- **Forb.** Any herbaceous plant not a grass or a sedge. **Forest cover.** All trees and other woody plants (underbrush) covering the ground in a forest.
- **Forest type.** A stand of trees similar in composition and development because of given physical and biological factors by which it may be differentiated from other stands.
- Fragipan. A loamy, brittle subsurface horizon low in porosity and content of organic matter and low or moderate in clay but high in silt or very fine sand. A fragipan appears cemented and restricts roots. When dry, it is hard or very hard and has a higher bulk density than the horizon or horizons above. When moist, it tends to rupture suddenly under pressure rather than to deform slowly.
- **Frost action** (in tables). Freezing and thawing of soil moisture. Frost action can damage roads, buildings and other structures, and plant roots.
- **Genesis, soil.** The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.
- Geomorphology. The science that treats the general configuration of the earth's surface; specifically the study of the classification, description, nature, origin, and development of landforms and their relationships to underlying structures, and the history of geologic changes as recorded by these surface features. The term is especially applied to the genetic interpretation of landforms.
- **Glacial drift.** Pulverized and other rock material transported by glacial ice and then deposited. Also, the sorted and unsorted material deposited by streams flowing from glaciers.
- **Glacial outwash.** Gravel, sand, and silt, commonly stratified, deposited by glacial meltwater.
- **Glaciofluvial deposits.** Material moved by glaciers and subsequently sorted and deposited by

- streams flowing from the melting ice. The deposits are stratified and occur as kames, eskers, deltas, and outwash plains.
- Glaciolacustrine deposits. Material ranging from fine clay to sand derived from glaciers and deposited in glacial lakes mainly by glacial meltwater. Many deposits are interbedded or laminated.
- **Gleyed soil.** Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.
- **Graded stripcropping.** Growing crops in strips that grade toward a protected waterway.
- **Grassed waterway.** A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.
- **Gravel.** Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.
- Gravelly soil material. Material that has 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.
- **Green manure crop** (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.
- **Ground water.** Water filling all the unblocked pores of the material below the water table.
- **Gully.** A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.
- **Hard bedrock.** Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.
- **Hardpan.** A hardened or cemented soil horizon, or layer. The soil material is sandy, loamy, or clayey and is cemented by iron oxide, silica, calcium carbonate, or other substance.
- **Head slope.** A geomorphic component of hills consisting of a laterally concave area of a hillside, especially at the head of a drainageway. The overland waterflow is converging.
- Hemic soil material (mucky peat). Organic soil material intermediate in degree of decomposition between the less decomposed fibric material and the more decomposed sapric material.

- Herbaceous peat. An accumulation of organic material, decomposed to some degree, that is predominantly the remains of sedges, reeds, cattails, and other herbaceous plants.
- **High-chroma zones.** Zones having chroma of 3 or more. Typical color in areas of iron concentrations.
- High-residue crops. Such crops as small grain and corn used for grain. If properly managed, residue from these crops can be used to control erosion until the next crop in the rotation is established. These crops return large amounts of organic matter to the soil.
- **Hill.** A natural elevation of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well defined outline; hillsides generally have slopes of more than 15 percent. The distinction between a hill and a mountain is arbitrary and is dependent on local usage.
- Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the "Soil Survey Manual." The major horizons of mineral soil are as follows:
  - O horizon.—An organic layer of fresh and decaying plant residue.
  - A horizon.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.
  - *E horizon.*—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.
  - B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.
  - C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the

- material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.
- *Cr horizon.*—Soft, consolidated bedrock beneath the soil.
- R layer.—Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.
- **Humus.** The well decomposed, more or less stable part of the organic matter in mineral soils.
- Hydrologic soil groups. Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.
- Ice-walled lake plain. A relict surface marking the floor of an extinct lake basin that was formed on solid ground and surrounded by stagnant ice in a stable or unstable superglacial environment on stagnation moraines. As the ice melted, the lake plain became perched above the adjacent landscape. The lake plain is well sorted, generally fine textured, stratified deposits.
- **Igneous rock.** Rock formed by solidification from a molten or partially molten state. Major varieties include plutonic and volcanic rock. Examples are andesite, basalt, and granite.
- **Illuviation.** The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.
- **Impervious soil.** A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.
- **Infiltration.** The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.
- **Infiltration capacity.** The maximum rate at which water can infiltrate into a soil under a given set of conditions.
- Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.
- **Intake rate.** The average rate of water entering the

soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Less than 0.2	very low
0.2 to 0.4	low
0.4 to 0.75	moderately low
0.75 to 1.25	moderate
1.25 to 1.75	moderately high
1.75 to 2.5	high
More than 2.5	very high

- **Interfluve.** An elevated area between two drainageways that sheds water to those drainageways.
- Intermittent stream. A stream, or reach of a stream, that flows for prolonged periods only when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.
- Iron concentrations. High-chroma zones having a high content of iron and manganese oxide because of chemical oxidation and accumulation, but having a clay content similar to that of the adjacent matrix. A type of redoximorphic concentration.
- Iron depletions. Low-chroma zones having a low content of iron and manganese oxide because of chemical reduction and removal, but having a clay content similar to that of the adjacent matrix. A type of redoximorphic depletion.
- Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation are: Basin.—Water is applied rapidly to nearly level plains surrounded by levees or dikes.

  Border.—Water is applied at the upper end of a strip in which the lateral flow of water is controlled by small earth ridges called border dikes, or borders.

Controlled flooding.—Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.

Corrugation.—Water is applied to small, closely spaced furrows or ditches in fields of closegrowing crops or in orchards so that it flows in only one direction.

*Drip (or trickle).*—Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

Furrow.—Water is applied in small ditches made

by cultivation implements. Furrows are used for tree and row crops.

Sprinkler.—Water is sprayed over the soil surface through pipes or nozzles from a pressure system. Subirrigation.—Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.

Wild flooding.—Water, released at high points, is allowed to flow onto an area without controlled distribution.

- **Kame.** An irregular, short ridge or hill of stratified glacial drift.
- Kame moraine. An end moraine that contains numerous kames. A group of kames along the front of a stagnant glacier, commonly comprising the slumped remnants of a formerly continuous outwash plain built up over the foot of rapidly wasting or stagnant ice.
- **Karst** (topography). The relief of an area underlain by limestone that dissolves in differing degrees, thus forming numerous depressions or small basins.
- **Knoll.** A small, low, rounded hill rising above adjacent landforms.
- K<sub>sat</sub>. Saturated hydraulic conductivity. (See Permeability.)
- Lacustrine deposit. Material deposited in lake water and exposed when the water level is lowered or the elevation of the land is raised.
- Lake bed. The bottom of a lake; a lake basin.
- **Lake plain.** A nearly level surface marking the floor of an extinct lake filled by well sorted, generally fine-textured, stratified deposits, commonly containing varves.
- **Lakeshore.** A narrow strip of land in contact with or bordering a lake; especially the beach of a lake.
- Lake terrace. A narrow shelf, partly cut and partly built, produced along a lakeshore in front of a scarp line of low cliffs and later exposed when the water level falls.
- Lamella. A thin (commonly less than 1 cm thick), discontinuous or continuous, generally horizontal layer of fine material (especially clay and iron oxides) that has been pedogenically concentrated (illuviated) within a coarser textured eluviated layer several centimeters to several decimeters thick.
- **Landslide.** The rapid downhill movement of a mass of soil and loose rock, generally when wet or saturated. The speed and distance of movement, as well as the amount of soil and rock material, vary greatly.
- **Large stones** (in tables). Rock fragments 3 inches (7.6 centimeters) or more across. Large stones adversely affect the specified use of the soil.

- **Leaching.** The removal of soluble material from soil or other material by percolating water.
- Linear extensibility. Refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. Linear extensibility is used to determine the shrink-swell potential of soils. It is an expression of the volume change between the water content of the clod at 1//3- or 1/10-bar tension (33kPa or 10kPa tension) and oven dryness. Volume change is influenced by the amount and type of clay minerals in the soil. The volume change is the percent change for the whole soil. If it is expressed as a fraction, the resulting value is COLE, coefficient of linear extensibility.
- **Liquid limit.** The moisture content at which the soil passes from a plastic to a liquid state.
- **Loam.** Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.
- **Loess.** Fine grained material, dominantly of silt-sized particles, deposited by wind.
- **Low-chroma zones.** Zones having chroma of 2 or less. Typical color in areas of iron depletions.
- Low-residue crops. Such crops as corn used for silage, peas, beans, and potatoes. Residue from these crops is not adequate to control erosion until the next crop in the rotation is established. These crops return little organic material to the soil.
- **Low strength.** The soil is not strong enough to support loads.
- **Marl.** An earthy, unconsolidated deposit consisting chiefly of calcium carbonate mixed with clay in approximately equal amounts.
- Masses. Concentrations of substances in the soil matrix that do not have a clearly defined boundary with the surrounding soil material and cannot be removed as a discrete unit. Common compounds making up masses are calcium carbonate, gypsum or other soluble salts, iron oxide, and manganese oxide. Masses consisting of iron oxide or manganese oxide generally are considered a type of redoximorphic concentration.
- **Mechanical treatment.** Use of mechanical equipment for seeding, brush management, and other management practices.
- **Medium textured soil.** Very fine sandy loam, loam, silt loam, or silt.
- **Metamorphic rock.** Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement. Nearly all such rocks are crystalline.
- Mineral soil. Soil that is mainly mineral material and

- low in organic material. Its bulk density is more than that of organic soil.
- **Minimum tillage.** Only the tillage essential to crop production and prevention of soil damage.
- **Miscellaneous area.** An area that has little or no natural soil and supports little or no vegetation.
- **Moderately coarse textured soil.** Coarse sandy loam, sandy loam, or fine sandy loam.
- **Moderately fine textured soil.** Clay loam, sandy clay loam, or silty clay loam.
- **Mollic epipedon.** A thick, dark, humus-rich surface horizon (or horizons) that has high base saturation and pedogenic soil structure. It may include the upper part of the subsoil.
- **Moraine.** An accumulation of earth, stones, and other debris deposited by a glacier. Some types are terminal, lateral, medial, and ground.
- Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.
- Mottling, soil. Irregular spots of different colors that vary in number and size. Descriptive terms are as follows: abundance—few, common, and many; size—fine, medium, and coarse; and contrast—faint, distinct, and prominent. The size measurements are of the diameter along the greatest dimension. Fine indicates less than 5 millimeters (about 0.2 inch); medium, from 5 to 15 millimeters (about 0.2 to 0.6 inch); and coarse, more than 15 millimeters (about 0.6 inch).
- **Muck.** Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)
- **Mucky peat.** Unconsolidated soil material consisting primarily of organic matter that is in an intermediate stage of decomposition such that a significant part of the material can be recognized and a significant part of the material cannot be recognized.
- **Mudstone.** Sedimentary rock formed by induration of silt and clay in approximately equal amounts.
- **Munsell notation.** A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.
- **Neutral soil.** A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)
- **Nodules.** Cemented bodies lacking visible internal structure. Calcium carbonate, iron oxide, and manganese oxide are common compounds

- making up nodules. If formed in place, nodules of iron oxide or manganese oxide are considered types of redoximorphic concentrations.
- **Nose slope.** A geomorphic component of hills consisting of the projecting end (laterally convex area) of a hillside. The overland waterflow is predominantly divergent.
- Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water
- Organic matter. Plant and animal residue in the soil in various stages of decomposition. The content of organic matter in the surface layer is described as follows:

Very low	less than 0.5 percent
Low	0.5 to 1.0 percent
Moderately low	1.0 to 2.0 percent
Moderate	2.0 to 4.0 percent
High	4.0 to 8.0 percent
Verv high	more than 8.0 percent

- Outwash plain. A landform of mainly sandy or coarse textured material of glaciofluvial origin. An outwash plain is commonly smooth; where pitted, it generally is low in relief.
- Paleoterrace. An erosional remnant of a terrace that retains the surface form and alluvial deposits of its origin but was not emplaced by, and commonly does not grade to, a present-day stream or drainage network.
- **Pan.** A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, hardpan, fragipan, claypan, plowpan, and traffic pan.
- **Parent material.** The unconsolidated organic and mineral material in which soil forms.
- **Peat.** Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture. (See Fibric soil material.)
- **Ped.** An individual natural soil aggregate, such as a granule, a prism, or a block.
- **Pedisediment.** A thin layer of alluvial material that mantles an erosion surface and has been transported to its present position from higher lying areas of the erosion surface.
- **Pedon.** The smallest volume that can be called "a soil." A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10

- square meters), depending on the variability of the soil.
- Percolation. The movement of water through the soil.
  Percs slowly (in tables). The slow movement of water through the soil adversely affects the specified use.
- Permeability. The quality of the soil that enables water or air to move downward through the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality. In soil physics, the rate is referred to as "saturated hydraulic conductivity," which is defined in the "Soil Survey Manual." In line with conventional usage in the engineering profession and with traditional usage in published soil surveys, this rate of flow continues to be expressed as "permeability." Terms describing permeability, measured in inches per hour, are as follows:

Impermeable	less than 0.0015 inch
Very slow	0.0015 to 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

- **Phase, soil.** A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.
- **pH value.** A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)
- **Piping** (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.
- Pitted outwash plain. An outwash plain marked by many irregular depressions, such as kettles, shallow pits, and potholes, that formed by melting of incorporated ice masses. Many examples can be observed in Wisconsin and Minnesota.
- Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.
- **Plastic limit.** The moisture content at which a soil changes from semisolid to plastic.
- Plateau. An extensive upland mass with relatively flat summit area that is considerably elevated (more than 100 meters) above adjacent lowlands and separated from them on one or more sides by escarpments.
- **Plowpan.** A compacted layer formed in the soil directly below the plowed layer.
- Ponding. Standing water on soils in closed

- depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.
- **Poor filter** (in tables). Because of rapid or very rapid permeability, the soil may not adequately filter effluent from a waste disposal system.
- **Poorly graded.** Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.
- **Potential native plant community.** See Climax plant community.
- Potential rooting depth (effective rooting depth).

Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.

- Prescribed burning. Deliberately burning an area for specific management purposes, under the appropriate conditions of weather and soil moisture and at the proper time of day.
- **Productivity, soil.** The capability of a soil for producing a specified plant or sequence of plants under specific management.
- **Profile, soil.** A vertical section of the soil extending through all its horizons and into the parent material.
- Reaction, soil. A measure of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Ultra acid	less than 3.5
Extremely acid	3.5 to 4.4
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Moderately acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Slightly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

## Redoximorphic concentrations. Nodules,

concretions, soft masses, pore linings, and other features resulting from the accumulation of iron or manganese oxide. An indication of chemical reduction and oxidation resulting from saturation.

**Redoximorphic depletions.** Low-chroma zones from which iron and manganese oxide or a combination of iron and manganese oxide and clay has been

- removed. These zones are indications of the chemical reduction of iron resulting from saturation.
- Redoximorphic features. Redoximorphic concentrations, redoximorphic depletions, reduced matrices, a positive reaction to alpha, alphadipyridyl, and other features indicating the chemical reduction and oxidation of iron and manganese compounds resulting from saturation.
- Reduced matrix. A soil matrix that has low chroma in situ because of chemically reduced iron (Fe II). The chemical reduction results from nearly continuous wetness. The matrix undergoes a change in hue or chroma within 30 minutes after exposure to air as the iron is oxidized (Fe III). A type of redoximorphic feature.
- **Regolith.** The unconsolidated mantle of weathered rock and soil material on the earth's surface; the loose earth material above the solid rock.
- **Relief.** The elevations or inequalities of a land surface, considered collectively.
- Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.
- **Rill.** A steep-sided channel resulting from accelerated erosion. A rill generally is a few inches deep and not wide enough to be an obstacle to farm machinery.
- **Rise.** A slight increase in elevation of the land surface, typically with a broad summit and gently sloping sides.
- **Road cut.** A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.
- **Rock fragments.** Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.
- **Rooting depth** (in tables). Shallow root zone. The soil is shallow over a layer that greatly restricts roots.
- **Root zone.** The part of the soil that can be penetrated by plant roots.
- Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called groundwater runoff or seepage flow from ground water.
- Saline soil. A soil containing soluble salts in an amount that impairs growth of plants. A saline soil does not contain excess exchangeable sodium.
- **Sand.** As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a

- soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.
- **Sandstone.** Sedimentary rock containing dominantly sand-sized particles.
- Sapric soil material (muck). The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.
- **Saprolite.** Unconsolidated residual material underlying the soil and grading to hard bedrock below.
- **Saturation.** Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.
- **Scarification.** The act of abrading, scratching, loosening, crushing, or modifying the surface to increase water absorption or to provide a more tillable soil.
- **Second bottom.** The first terrace above the normal flood plain (or first bottom) of a river.
- Sedimentary rock. Rock made up of particles deposited from suspension in water. The chief kinds of sedimentary rock are conglomerate, formed from gravel; sandstone, formed from sand; shale, formed from clay; and limestone, formed from soft masses of calcium carbonate. There are many intermediate types. Some wind-deposited sand is consolidated into sandstone.
- **Seepage** (in tables). The movement of water through the soil. Seepage adversely affects the specified use.
- **Sequum.** A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)
- **Series, soil.** A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.
- **Shale.** Sedimentary rock formed by the hardening of a clay deposit.
- **Sheet erosion.** The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.
- **Shoulder.** The position that forms the uppermost inclined surface near the top of a hillslope. It is a transition from backslope to summit. The surface is dominantly convex in profile and erosional in origin.
- **Shrink-swell** (in tables). The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building

- foundations, and other structures. It can also damage plant roots.
- **Side slope.** A geomorphic component of hills consisting of a laterally planar area of a hillside. The overland waterflow is predominantly parallel.
- **Silica.** A combination of silicon and oxygen. The mineral form is called quartz.
- Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.
- **Siltstone.** Sedimentary rock made up of dominantly silt-sized particles.
- Similar soils. Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.
- **Sinkhole.** A depression in the landscape where limestone has been dissolved.
- Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.
- **Slope.** The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance.
- **Slope** (in tables). Slope is great enough that special practices are required to ensure satisfactory performance of the soil for a specific use.
- Sloughed till. Water-saturated till that has flowed slowly downhill from its original place of deposit by glacial ice. It may rest on other till, on glacial outwash, or on a glaciolacustrine deposit.
- **Slow intake** (in tables). The slow movement of water into the soil.
- **Slow refill** (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.
- **Small stones** (in tables). Rock fragments less than 3 inches (7.6 centimeters) in diameter. Small stones adversely affect the specified use of the soil.
- Sodium adsorption ratio (SAR). A measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration.

**Soft bedrock.** Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

- **Soil.** A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief and by the passage of time.
- Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	less than 0.002

- **Solum.** The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.
- Stagnation moraine. A body of drift released by the melting of a glacier that ceased flowing.

  Commonly (but not always) occurs near ice margins; composed of till, ice-contact stratified drift, and small areas of glacial lake sediment.

  Typical landforms are knob-and-kettle topography, locally including ice-walled lake plains.
- Stone line. A concentration of rock fragments in a soil. Generally, it is indicative of an old weathered surface. In a cross section, the line may be one fragment or more thick. It generally overlies material that weathered in place and is overlain by recent sediment of variable thickness.
- **Stones.** Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.
- **Stony.** Refers to a soil containing stones in numbers that interfere with or prevent tillage.
- **Stripcropping.** Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind erosion and water erosion.
- Structure, soil. The arrangement of primary soil

- particles into compound particles or aggregates. The principal forms of soil structure are—platy (laminated), prismatic (vertical axis of aggregates longer than horizontal), columnar (prisms with rounded tops), blocky (angular or subangular), and granular. Structureless soils are either single grain (each grain by itself, as in dune sand) or massive (the particles adhering without any regular cleavage, as in many hardpans).
- Stubble mulch. Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind erosion and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.
- Subsidence. The potential decrease in surface elevation as a result of the drainage of wet soils that have organic layers or semifluid mineral layers. Subsidence, as a result of drainage, is attributed to (1) shrinkage from drying, (2) consolidation because of the loss of ground-water buoyancy, (3) compaction from tillage or manipulation, (4) wind erosion, (5) burning, and (6) biochemical oxidation.
- **Subsoil.** Technically, the B horizon; roughly, the part of the solum below plow depth.
- **Subsoiling.** Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.
- **Substratum.** The part of the soil below the solum. **Subsurface layer.** Any surface soil horizon (A, E, AB, or EB) below the surface layer.
- **Summit.** The topographically highest position of a hillslope. It has a nearly level (planar or only slightly convex) surface.
- Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the "plow layer," or the "Ap horizon."
- **Surface soil.** The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.
- **Swale.** A slight depression in the midst of generally level land. A shallow depression in an undulating ground moraine caused by uneven glacial deposition.
- Taxadjuncts. Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior. Soils are recognized as taxadjuncts only

- when one or more of their characteristics are slightly outside the range defined for the family of the series for which the soils are named.
- **Terminal moraine.** A belt of thick glacial drift that generally marks the termination of important glacial advances.
- Terrace. An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.
- **Terrace** (geologic). An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea.
- **Texture, soil.** The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay, and clay. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."
- **Thin layer** (in tables). Otherwise suitable soil material that is too thin for the specified use.
- **Till.** Unsorted, nonstratified glacial drift consisting of clay, silt, sand, and boulders transported and deposited by glacial ice.
- **Till plain.** An extensive area of nearly level to undulating soils underlain by glacial till.
- **Tilth, soil.** The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.
- **Toeslope.** The position that forms the gently inclined surface at the base of a hillslope. Toeslopes in profile are commonly gentle and linear and are constructional surfaces forming the lower part of a hillslope continuum that grades to valley or closed-depression floors.
- **Topsoil.** The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

- **Trace elements.** Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.
- **Upland.** Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.
- Valley fill. In glaciated regions, material deposited in stream valleys by glacial meltwater. In nonglaciated regions, alluvium deposited by heavily loaded streams.
- **Variegation.** Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.
- Varve. A sedimentary layer or a lamina or sequence of laminae deposited in a body of still water within a year. Specifically, a thin pair of graded glaciolacustrine layers seasonally deposited, usually by meltwater streams, in a glacial lake or other body of still water in front of a glacier.
- Water bars. Smooth, shallow ditches or depressional areas that are excavated at an angle across a sloping road. They are used to reduce the downward velocity of water and divert it off and away from the road surface. Water bars can easily be driven over if constructed properly.
- **Weathering.** All physical and chemical changes produced in rocks or other deposits at or near the earth's surface by atmospheric agents. These changes result in disintegration and decomposition of the material.
- Well graded. Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.
- Wilting point (or permanent wilting point). The moisture content of soil, on an ovendry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.
- **Windthrow.** The uprooting and tipping over of trees by the wind.
- **Woody peat.** An accumulation of organic material that is predominantly composed of trees, shrubs, and other woody plants.

## ROSEAU COUNTY, MINNESOTA MN135

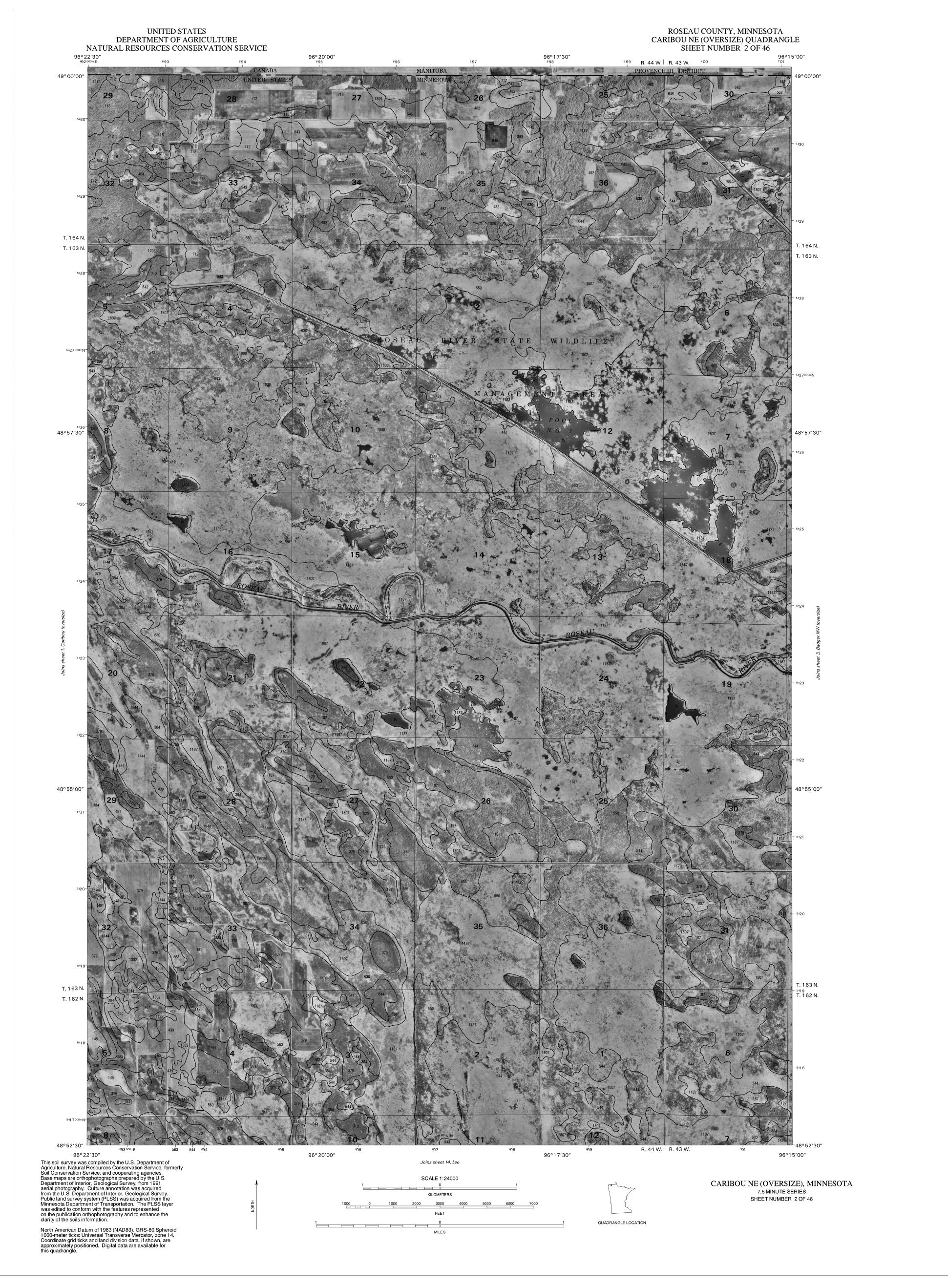
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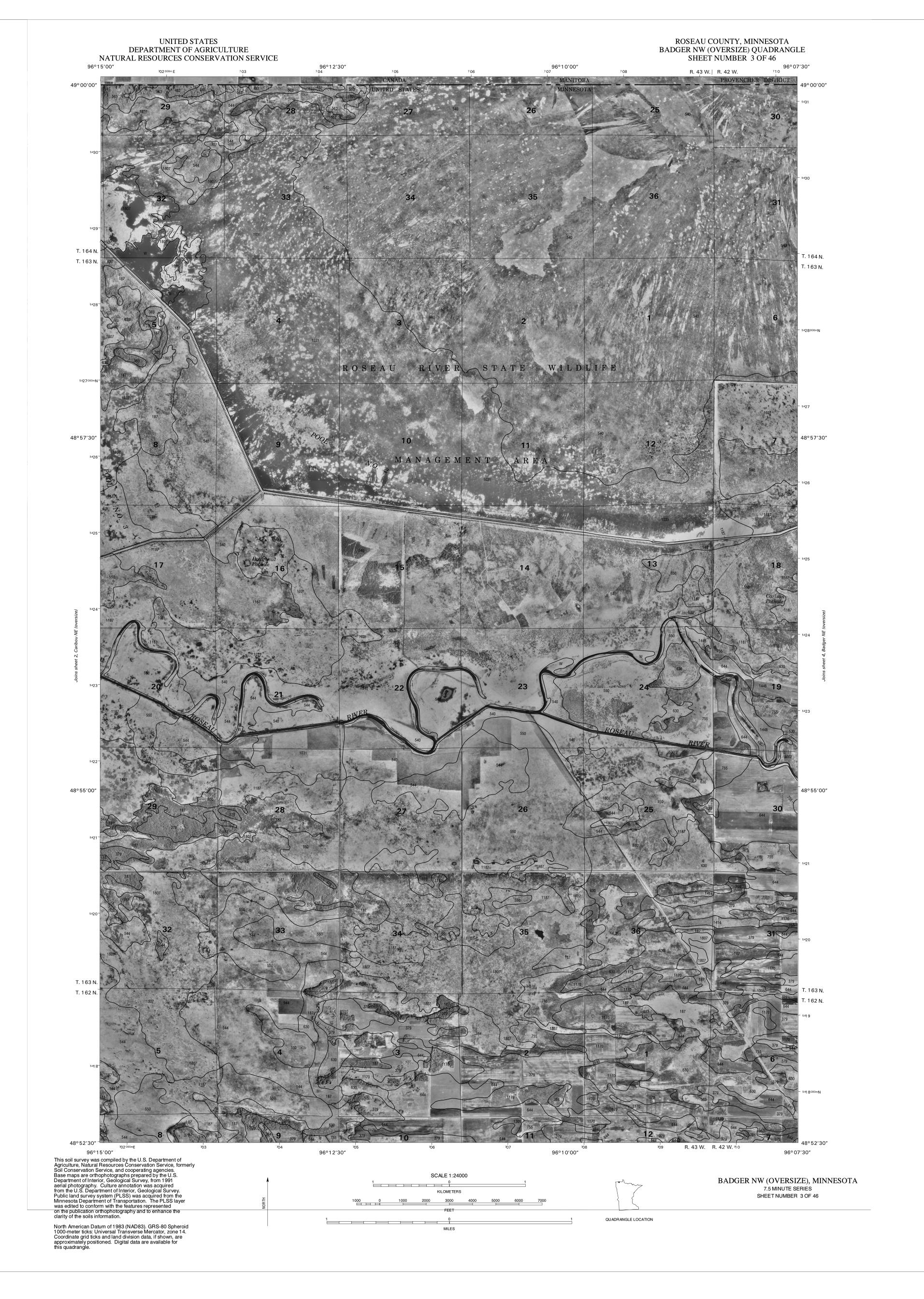
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ROSEAU COUNTY, MINNESOTA CARIBOU (OVERSIZE) QUADRANGLE SHEET NUMBER 1 OF 46 **UNITED STATES** DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 96° 30′00″ 683000m E 96° 27′ 30″ 686 96° 25′00″ 689 96° 22′30″ R. 45 W. R. 44 W. PROVENCHER DISTRICT 49°00′00″ This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1991 aerial photography. Culture annotation was acquired from the U.S. Department of Interior, Geological Survey. Public land survey system (PLSS) was acquired from the Minnesota Department of Transportation. The PLSS layer was edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information. SCALE 1:24000 CARIBOU (OVERSIZE), MINNESOTA 1 0 7.5 MINUTE SERIES KILOMETERS SHEET NUMBER 1 OF 46 QUADRANGLE LOCATION North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 14. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle. MILES





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ROSEAU COUNTY, MINNESOTA **UNITED STATES** BADGER NE (OVERSIZE) QUADRANGLE SHEET NUMBER 4 OF 46 DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 96° 05′00″ 96° 07′ 30″ 96° 02′30″ 8 R. 42 W. R. 41 W. PROVENCHER DISTRICT 49° 00′ 00″ 49°00′00″ RIVER STATE WILDLIFE T. 164 N. T. 163 N. MANAGEMENT - <sub>5427</sub> 48° 57′30″ 48°57′30″ 48°55′00″ 48°55′00″ T. 162 N. T. 162 N. 719 R. 42 W. R. 41 W. 96° 00′00″ 96° 05′00″ 96° 02′30″ This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1991 aerial photography. Culture annotation was acquired from the U.S. Department of Interior, Geological Survey. Public land survey system (PLSS) was acquired from the Minnesota Department of Transportation. The PLSS layer was edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information. SCALE 1:24000 BADGER NE (OVERSIZE), MINNESOTA 7.5 MINUTE SERIES KILOMETERS SHEET NUMBER 4 OF 46 1000 0 1000 2000 3000 FEET QUADRANGLE LOCATION 0 North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 14. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle. MILES

ROSEAU COUNTY, MINNESOTA PINECREEK (OVERSIZE) QUADRANGLE SHEET NUMBER 5 OF 46 **UNITED STATES** DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 96° 00′00″ 95°57′30″ 95°55′00″ 95°52′30″ CANADA MANITOBA PROVENCHER DISTRICT 49°00′00″ 49° 00′ 00″ T. 164 N. T. 163 N. T. 163 N. 48° 57′ 30″ 48° 57′ 30″ 48° 55′00″ 48° 55′00″ T. 163 N. T. 162 N. T. 162 N. 95° 52′30″ <sup>28</sup>3 95°57′30″ <sup>28</sup>6 95°55′00″ 96° 00′ 00″ This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1991 aerial photography. Culture annotation was acquired from the U.S. Department of Interior, Geological Survey. Public land survey system (PLSS) was acquired from the Minnesota Department of Transportation. The PLSS layer was edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information. SCALE 1:24000 PINECREEK (OVERSIZE), MINNESOTA 7.5 MINUTE SERIES KILOMETERS SHEET NUMBER 5 OF 46 1000 0 1000 2000 3000 FEET QUADRANGLE LOCATION 1 0 North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle. MILES

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ROSEAU COUNTY, MINNESOTA ROSEAU NE (OVERSIZE) QUADRANGLE SHEET NUMBER 6 OF 46 **UNITED STATES** DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 95°52′30″ 290000m E 95°50′00″ 95° 47′30″ ²96 95° 45′00″ R. 40 W. <sup>2</sup>92 R. 40 W. <sup>2</sup>97 MANITOBA MINNESOTA CANADA 49° 00′ 00″ LOST T. 164 N. T. 164 N. T. 163 N. T. 163 N. 48° 57′ 30″ 48° 57′30″ 48°55′00″ T. 163 N. <sup>2</sup> 95°50′00″ 95° 47′30″ 95° 45′00″ 95°52′30″ This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1991 aerial photography. Culture annotation was acquired from the U.S. Department of Interior, Geological Survey. Public land survey system (PLSS) was acquired from the Minnesota Department of Transportation. The PLSS layer was edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information. SCALE 1:24000 ROSEAU NE (OVERSIZE), MINNESOTA 7.5 MINUTE SERIES KILOMETERS SHEET NUMBER 6 OF 46 1000 0 1000 2000 3000 FEET QUADRANGLE LOCATION 1 0 North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle. MILES

ROSEAU COUNTY, MINNESOTA SALOL NW (OVERSIZE) QUADRANGLE SHEET NUMBER 7 OF 46 UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE 95° 45′00″ 299 000m E 95° 42′30″ ³02 95° 40′00″ ³05 49° 00′ 00″ PROVENCHER DISTRICT 49° 00′00″ 28 LOST T. 164 N. T. 164 N. T. 163 N. T. 163 N. - <sup>5426</sup> 48°57′30″ 48°57′30″ 48°55′00″ T. 162 N. This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1991 aerial photography. Culture annotation was acquired from the U.S. Department of Interior, Geological Survey. Public land survey system (PLSS) was acquired from the Minnesota Department of Transportation. The PLSS layer was edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information. SCALE 1:24000 SALOL NW (OVERSIZE), MINNESOTA 7.5 MINUTE SERIES KILOMETERS SHEET NUMBER 7 OF 46 FEET QUADRANGLE LOCATION North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle. MILES

UNITED STATES DEPARTMENT OF AGRICULTURE ROSEAU COUNTY, MINNESOTA SALOL NE (OVERSIZE) QUADRANGLE SHEET NUMBER 8 OF 46 NATURAL RESOURCES CONSERVATION SERVICE 95° 35′00″ ³11 95° 37′30″ PROVENCHER DISTRICT 49°00′00″ 49° 00′ 00″ CANADA T. 164 N. T. 163 N. T. 164 N. T. 163 N. <sup>5426-</sup>48°57′30″ 48° 57′ 30″ 48° 55′00″ -48° 55′00″ T. 163 N. T. 162 N. T. 162 N. 48°52′30″ R. 39 W. R. 38 W. 95°37′30″ 95°35′00″ 95° 32′30″ 95° 30′00″ This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1991 aerial photography. Culture annotation was acquired from the U.S. Department of Interior, Geological Survey. Public land survey system (PLSS) was acquired from the Minnesota Department of Transportation. The PLSS layer was edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information. Joins sheet 20, Salol SCALE 1:24000 SALOL NE (OVERSIZE), MINNESOTA 7.5 MINUTE SERIES KILOMETERS SHEET NUMBER 8 OF 46 FEET QUADRANGLE LOCATION North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

ROSEAU COUNTY, MINNESOTA WARROAD NW (OVERSIZE) QUADRANGLE SHEET NUMBER 9 OF 46 UNITED STATES DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 95°27′30″ ³20 95° 25′00″ 95° 30′00″ R. 38 W. | R. 37 W. 49°00′00″ T. 164 N. T. 163 N. T. 163 N. 48°57′30″ 48° 57′ 30″ 48° 55′00″ <sup>-</sup> 48°55′00″ 95°25′00″ 95° 27′ 30″ 95°22′30″ This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1991 aerial photography. Culture annotation was acquired from the U.S. Department of Interior, Geological Survey. Public land survey system (PLSS) was acquired from the Minnesota Department of Transportation. The PLSS layer was edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information. Joins sheet 21, Warroad SW SCALE 1:24000 WARROAD NW (OVERSIZE), MINNESOTA 7.5 MINUTE SERIES KILOMETERS SHEET NUMBER 9 OF 46 QUADRANGLE LOCATION 0 North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle. MILES

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE ROSEAU COUNTY, MINNESOTA WARROAD (OVERSIZE) QUADRANGLE SHEET NUMBER 10 OF 46 95° 20′00″ 95° 22′30″ 95°17′30″ 95°15′00″ R. 37 W. | R. 36 W. 49° 00′ 00″ 49° 00′ 00″ T. 164 N. 48° 57′ 30″ 48°57′30″ 48°55′00″ 48°55′00″ 48°52′30″ 48°52′30″ 95° 22′30″ 95°17′30″ 95° 20′ 00″ 95°15′00″ 95° 22′30″

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1991 aerial photography. Culture annotation was acquired from the U.S. Department of Interior, Geological Survey. Public land survey system (PLSS) was acquired from the Minnesota Department of Transportation. The PLSS layer was edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information. Joins sheet 22, Warroad SE SCALE 1:24000 WARROAD (OVERSIZE), MINNESOTA 7.5 MINUTE SERIES KILOMETERS SHEET NUMBER 10 OF 46 QUADRANGLE LOCATION 0 North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle. MILES

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**UNITED STATES** ROSEAU COUNTY, MINNESOTA ROOSEVELT NW QUADRANGLE SHEET NUMBER 11 OF 46 DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 95°12′30″ 95°15′00″ 95°10′00″ 95° 07′30″ 48° 57′30″ 48° 57′ 30″ 48°55′00″ This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1991 aerial photography. Culture annotation was acquired from the U.S. Department of Interior, Geological Survey. Public land survey system (PLSS) was acquired from the Minnesota Department of Transportation. The PLSS layer was edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information. Joins sheet 23, Swift SCALE 1:24000 ROOSEVELT NW, MINNESOTA 7.5 MINUTE SERIES KILOMETERS SHEET NUMBER 11 OF 46 QUADRANGLE LOCATION North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle. MILES

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UNITED STATES ROSEAU COUNTY, MINNESOTA DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE ROOSEVELT NE QUADRANGLE SHEET NUMBER 12 OF 46 95° 07′30″ 95° 05′00″ 95°00′00″ 95°02′30″ 49° 00′ 00″ 49° 00′ 00″ 5426000mN 48° 57′ 30″ 48°57′30″ 48°55′00″ <sup>350</sup> 95° 02′30″ 95° 07′30″ This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1991 aerial photography. Culture annotation was acquired from the U.S. Department of Interior, Geological Survey. Public land survey system (PLSS) was acquired from the Minnesota Department of Transportation. The PLSS layer was edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information. Joins sheet 24, Roosevelt SCALE 1:24000 ROOSEVELT NE, MINNESOTA 7.5 MINUTE SERIES KILOMETERS SHEET NUMBER 12 OF 46 QUADRANGLE LOCATION 0 North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle. MILES

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**UNITED STATES** ROSEAU COUNTY, MINNESOTA JUNEBERRY RIDGE QUADRANGLE SHEET NUMBER 13 OF 46 DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE Joins sheet 1, Caribou (oversize) 96° 30′00″ 96° 27′ 30″ 96° 25′00″ 96° 22′30″ R. 45 W. R. 44 W. 48° 52′30″ 48° 50′00″ \_48°50′00″ 48° 47′30″ 96° 25′00″ This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1991 aerial photography. Culture annotation was acquired from the U.S. Department of Interior, Geological Survey. Public land survey system (PLSS) was acquired from the Minnesota Department of Transportation. The PLSS layer was edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information. SCALE 1:24000 JUNEBERRY RIDGE, MINNESOTA 7.5 MINUTE SÉRIES KILOMETERS SHEET NUMBER 13 OF 46 QUADRANGLE LOCATION North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 14. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle. MILES

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**UNITED STATES** ROSEAU COUNTY, MINNESOTA HAUG QUADRANGLE SHEET NUMBER 15 OF 46 DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 96°15′00″ Joins sheet 3, Badger NW (oversize) 379 R. 43 W. R. 42 W.<sup>7</sup>10 48°52′30″ 48° 50′00″ 48°50′00″ 48° 47′30″ 48° 45′00″ <sup>708</sup> 96°10′00″ <sup>705</sup> 96°12′30″ R. 43 W. R. 42 W. 96° 07′30″ 96°15′00″ 96°15′00″

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1991 aerial photography. Culture annotation was acquired from the U.S. Department of Interior, Geological Survey. Public land survey system (PLSS) was acquired from the Minnesota Department of Transportation. The PLSS layer was edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information. Joins sheet 27, Greenbush SCALE 1:24000 HAUG, MINNESOTA 7.5 MINUTE SERIES KILOMETERS SHEET NUMBER 15 OF 46 QUADRANGLE LOCATION 0 North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 14. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle. MILES

**UNITED STATES** ROSEAU COUNTY, MINNESOTA BADGER QUADRANGLE SHEET NUMBER 16 OF 46 DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE Joins sheet 4, Badger NE (oversize) 96° 00′ 00″ 719 R. 42 W. R. 41 W. 96° 07′30″ 711 000m E 96° 05′00″ 48°52′30″ 48°50′00″ 48° 50′00″ T. 162 N. T. 161 N. T. 161 N. 48° 45′00″ 96° 02′30″ 96° 05′00″ 96° 07′30″

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1991 aerial photography. Culture annotation was acquired from the U.S. Department of Interior, Geological Survey. Public land survey system (PLSS) was acquired from the Minnesota Department of Transportation. The PLSS layer was edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information. Joins sheet 28, Greenbush NE SCALE 1:24000 BADGER, MINNESOTA 7.5 MINUTE SERIES KILOMETERS SHEET NUMBER 16 OF 46 QUADRANGLE LOCATION North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 14. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle. MILES

ROSEAU COUNTY, MINNESOTA FOX QUADRANGLE SHEET NUMBER 17 OF 46 **UNITED STATES** DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE Joins sheet 5, Pinecreek (oversize) 95°57′30″ ²83 95°55′00″ <sup>286</sup> 95°52′30″ <sup>289</sup> 96° 00′00″ 48° 52′30″ 48°52′30″ 48° 50′00″ 48° 50′ 00″ T. 161 N. 48° 47′30″ - 5408 48° 47′30″ 48° 45′00″ 95°55′00″ 95°57′30″ 95°52′30″ This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1991 aerial photography. Culture annotation was acquired from the U.S. Department of Interior, Geological Survey. Public land survey system (PLSS) was acquired from the Minnesota Department of Transportation. The PLSS layer was edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information. Joins sheet 29, Thief Lake NW SCALE 1:24000 FOX, MINNESOTA 1 0 7.5 MINUTE SERIES KILOMETERS SHEET NUMBER 17 OF 46 QUADRANGLE LOCATION 0 North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle. MILES

**UNITED STATES** ROSEAU COUNTY, MINNESOTA ROSEAU QUADRANGLE SHEET NUMBER 18 OF 46 DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 95°50′00″ Joins sheet 6, Roseau NE (oversize) 95° 47′30″ 95° 45′00″ 95°52′30″ 48°52′30″ | 48°52′30″ 48°50′00″ 48° 50′00″ T. 162 N. 48° 47′ 30″ 95° 47′30″ 95°52′30″ 95°50′00″ 95° 45′00″ This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1991 aerial photography. Culture annotation was acquired from the U.S. Department of Interior, Geological Survey. Public land survey system (PLSS) was acquired from the Minnesota Department of Transportation. The PLSS layer was edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information. Joins sheet 30, Thief Lake NE SCALE 1:24000 ROSEAU, MINNESOTA 1 0 7.5 MINUTE SERIES KILOMETERS SHEET NUMBER 18 OF 46 QUADRANGLE LOCATION 0 North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle. MILES

ROSEAU COUNTY, MINNESOTA **UNITED STATES** MALUNG QUADRANGLE SHEET NUMBER 19 OF 46 DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE Joins sheet 7, Salol NW (oversize) 95° 45′00″ 95° 42′30″ 95° 40′00″ 95° 37′30″ 48°52′30″ 7 48° 52′30″ 48° 50′00″ 52 \_48°50′00″ T. 161 N. T. 161 N. 48° 47′30″ 95° 45′00″ <sup>30</sup>1 95° 42′30″ <sup>30</sup>4 95° 40′00″ 95° 37′30″ This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1991 aerial photography. Culture annotation was acquired from the U.S. Department of Interior, Geological Survey. Public land survey system (PLSS) was acquired from the Minnesota Department of Transportation. The PLSS layer was edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information. Joins sheet 31, Wannaska SCALE 1:24000 MALUNG, MINNESOTA 1 0 7.5 MINUTE SERIES KILOMETERS SHEET NUMBER 19 OF 46 QUADRANGLE LOCATION 0 North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle. MILES

**UNITED STATES** ROSEAU COUNTY, MINNESOTA SALOL QUADRANGLE SHEET NUMBER 20 OF 46 DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE Joins sheet 8, Salol NE (oversize) 95°37′30″ 95° 35′00″ 95° 30′00″ 48°52′30″ 48°52′30″ 48°50′00″\_ 48°50′00″ T. 162 N.-T. 161 N. T. 161 N. 48° 47′30″ 48° 45′00″ <sup>[</sup> <sup>₃¹</sup>o 95°35′00″ This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1991 aerial photography. Culture annotation was acquired from the U.S. Department of Interior, Geological Survey. Public land survey system (PLSS) was acquired from the Minnesota Department of Transportation. The PLSS layer was edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information. Joins sheet 32, Wannaska NE SCALE 1:24000 SALOL, MINNESOTA 1 0 7.5 MINUTE SERIES KILOMETERS SHEET NUMBER 20 OF 46 QUADRANGLE LOCATION 0 North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle. MILES

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**UNITED STATES** ROSEAU COUNTY, MINNESOTA WARROAD SW QUADRANGLE SHEET NUMBER 21 OF 46 DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE Joins sheet 9, Warroad NW (oversize) 95°25′00″ 95°27′30″ 95°22′30″ 48° 52′30″ 48°50′00″ 48° 50′00″ T. 161 N. 95° 25′ 00″ 95°22′30″ 95°27′30″ This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1991 aerial photography. Culture annotation was acquired from the U.S. Department of Interior, Geological Survey. Public land survey system (PLSS) was acquired from the Minnesota Department of Transportation. The PLSS layer was edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information. Joins sheet 33, Mulligan Lake NW SCALE 1:24000 WARROAD SW, MINNESOTA 7.5 MINUTE SERIES KILOMETERS SHEET NUMBER 21 OF 46 QUADRANGLE LOCATION North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle. MILES

**UNITED STATES** ROSEAU COUNTY, MINNESOTA WARROAD SE QUADRANGLE SHEET NUMBER 22 OF 46 DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE Joins sheet 10, Warroad (oversize) 95° 20′00″ ³29 95°17′30″ ³32 95°15′00″ ³35 48° 50′ 00″ 48°50′00″ T. 161 N. 95° 20′ 00″ This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1991 aerial photography. Culture annotation was acquired from the U.S. Department of Interior, Geological Survey. Public land survey system (PLSS) was acquired from the Minnesota Department of Transportation. The PLSS layer was edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information. Joins sheet 34, Mulligan Lake NE SCALE 1:24000 WARROAD SE, MINNESOTA 7.5 MINUTE SERIES KILOMETERS SHEET NUMBER 22 OF 46 QUADRANGLE LOCATION 0 North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle. MILES

**UNITED STATES** ROSEAU COUNTY, MINNESOTA SWIFT QUADRANGLE SHEET NUMBER 23 OF 46 DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE Joins sheet 11, Roosevelt NW 95°12′30″ ³38 95°10′00″ 95° 07′30″ ³44 95°15′00″ 48°52′30″ 48°50′00″ 48° 50′00″ T. 162 N. T. 161 N. 48° 47′30″ 48° 47′30″ R. 36 W. R. 35 W. 95°10′00″ 95°15′00″ 95°12′30″ 95° 07′30″ This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1991 aerial photography. Culture annotation was acquired from the U.S. Department of Interior, Geological Survey. Public land survey system (PLSS) was acquired from the Minnesota Department of Transportation. The PLSS layer was edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information. Joins sheet 35, Winter Road Lake NW SCALE 1:24000 SWIFT, MINNESOTA 7.5 MINUTE SERIES KILOMETERS SHEET NUMBER 23 OF 46 QUADRANGLE LOCATION North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle. MILES

ROSEAU COUNTY, MINNESOTA **UNITED STATES** DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE ROOSEVELT QUADRANGLE SHEET NUMBER 24 OF 46 95° 05′00″ Joins sheet 12, Roosevelt NE 95° 00′ 00″ 95°02′30″ 95° 07′30″ 48°52′30″ 48°52′30″ 48°50′00″ 48° 50′00″ T. 161 N. 48° 47′30″ 95° 02′30″ <sup>34</sup>7 95° 05′00″ 95°00′00″ This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1991 aerial photography. Culture annotation was acquired from the U.S. Department of Interior, Geological Survey. Public land survey system (PLSS) was acquired from the Minnesota Department of Transportation. The PLSS layer was edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information. Joins sheet 36, Winter Road Lake SCALE 1:24000 ROOSEVELT, MINNESOTA 7.5 MINUTE SERIES KILOMETERS SHEET NUMBER 24 OF 46 QUADRANGLE LOCATION North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle. MILES

ROSEAU COUNTY, MINNESOTA **UNITED STATES** PELAN QUADRANGLE SHEET NUMBER 25 OF 46 DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE Joins sheet 13, Juneberry Ridge 96° 30′ 00″ 684 000m E 96° 27′ 30″ 96° 25′00″ °90 96° 22′30″ R. 45 W. R. 44 W. 48° 45′00″ T. 160 N. 48° 42′30″ 48° 40′00″ 48° 37′ 30″ <sup>6</sup>92 R. 45 W. R. 44 W. <sup>6</sup>93 96° 25′00″ 96° 27′ 30″ 96° 30′ 00″ 96° 30′00″

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1991 aerial photography. Culture annotation was acquired from the U.S. Department of Interior, Geological Survey. Public land survey system (PLSS) was acquired from the Minnesota Department of Transportation. The PLSS layer was edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information. Joins sheet 37, Twistal Swamp SCALE 1:24000 PELAN, MINNESOTA 7.5 MINUTE SERIES KILOMETERS SHEET NUMBER 25 OF 46 QUADRANGLE LOCATION North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 14. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle. MILES

ROSEAU COUNTY, MINNESOTA PELAN NE QUADRANGLE SHEET NUMBER 26 OF 46 **UNITED STATES** DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE Joins sheet 14, Leo 96° 22′30″ %93000m E 96° 20′00″ 696 <sup>700</sup> R. 44 W. R. 43 W. <sup>701</sup> T. 161 N. T. 160 N. 5399000mN-T. 160 N. 48° 42′30″ 48° 42′30″ 48° 40′00″ T. 160 N. T. 159 N. R. 44 W. R. 43 W. 96° 20′00″ 96° 22′ 30″ 96°17′30″ 96° 22′30″

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1991 aerial photography. Culture annotation was acquired from the U.S. Department of Interior, Geological Survey. Public land survey system (PLSS) was acquired from the Minnesota Department of Transportation. The PLSS layer was edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information. Joins sheet 38, Pelan SE SCALE 1:24000 PELAN NE, MINNESOTA 7.5 MINUTE SERIES KILOMETERS SHEET NUMBER 26 OF 46 1000 0 1000 2000 QUADRANGLE LOCATION North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 14. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle. MILES

**UNITED STATES** ROSEAU COUNTY, MINNESOTA GREENBUSH QUADRANGLE SHEET NUMBER 27 OF 46 DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 96° 07′30″ Joins sheet 15, Haug 96°10′00″ 96°12′30″ R, 43 W. R. 42 W. T. 161 N. T. 160 N. T. 160 N. 48° 42′30″ 48° 42′30″ 48° 40′00″ T. 160 N. T. 159 N. 96°15′00″ 96°10′00″ 96° 07′30″ This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1991 aerial photography. Culture annotation was acquired from the U.S. Department of Interior, Geological Survey. Public land survey system (PLSS) was acquired from the Minnesota Department of Transportation. The PLSS layer was edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information. Joins sheet 39, Strathcona SCALE 1:24000 GREENBUSH, MINNESOTA 1 0 7.5 MINUTE SERIES KILOMETERS SHEET NUMBER 27 OF 46 QUADRANGLE LOCATION 0 North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 14. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle. MILES

**UNITED STATES** ROSEAU COUNTY, MINNESOTA THIEF LAKE NW QUADRANGLE SHEET NUMBER 29 OF 46 DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE Joins sheet 17, Fox 96° 00′00″ 95°57′30″ 95°55′00″ 95°52′30″ 48° 45′00″ T. 161 N. T. 161 N T. 160 N. T. 160 N. 48° 42′30″ 48° 42′30″ 48° 40′00″ 48° 40′00″ T. 159 N. 96° 00′00″ <sup>28</sup>2 95°57′30″ <sup>28</sup>5 95° 55′00″ 95°52′30″ 96° 00′00″

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1991 aerial photography. Culture annotation was acquired from the U.S. Department of Interior, Geological Survey. Public land survey system (PLSS) was acquired from the Minnesota Department of Transportation. The PLSS layer was edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information. Joins sheet 41, Thief Lake SCALE 1:24000 THIEF LAKE NW, MINNESOTA 1 0 7.5 MINUTE SERIES KILOMETERS SHEET NUMBER 29 OF 46 QUADRANGLE LOCATION 0 North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle. MILES

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UNITED STATES ROSEAU COUNTY, MINNESOTA THIEF LAKE NE QUADRANGLE SHEET NUMBER 30 OF 46 DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE Joins sheet 18, Roseau 95°50′00″ 95° 47′30″ ²95 95° 45′00″ <sup>5400000m</sup>N</sub>-T. 161 N. T. 160 N. T. 160 N. 48° 42′30″ 48° 42′30″ 48° 40′00″ 48° 40′00″ 95° 47′30″ 95°52′30″ 95°50′00″ This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1991 aerial photography. Culture annotation was acquired from the U.S. Department of Interior, Geological Survey. Public land survey system (PLSS) was acquired from the Minnesota Department of Transportation. The PLSS layer was edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information. Joins sheet 42, Thief Lake SE SCALE 1:24000 THIEF LAKE NE, MINNESOTA 1 0 7.5 MINUTE SERIES KILOMETERS SHEET NUMBER 30 OF 46 QUADRANGLE LOCATION 0 North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle. MILES

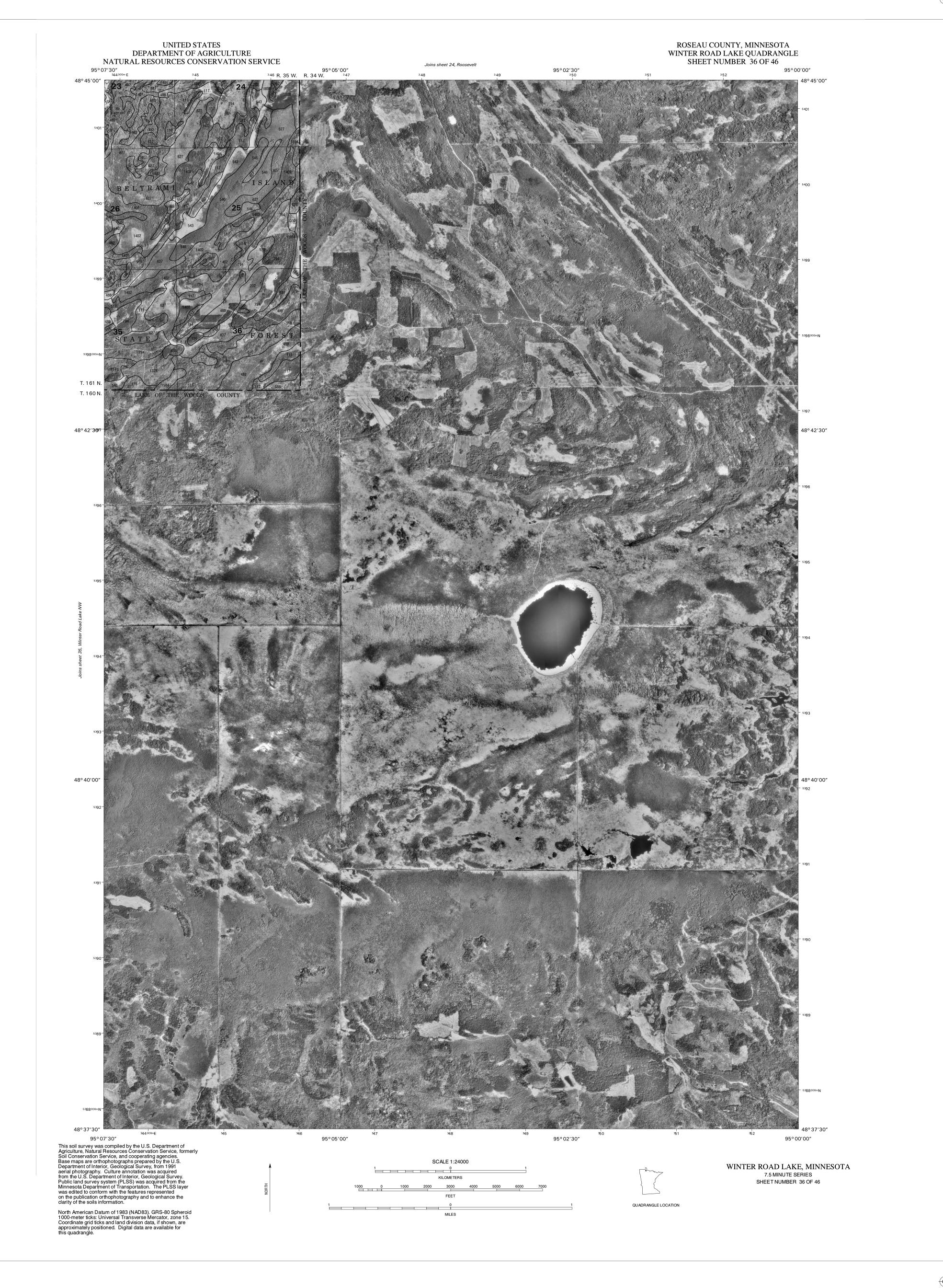
UNITED STATES ROSEAU COUNTY, MINNESOTA WANNASKA QUADRANGLE SHEET NUMBER 31 OF 46 DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE Joins sheet 19, Malung 95° 45′00″ 298 000m E 95° 40′00″ ³04 95° 37′30″ ³07 95° 42′30″ 48° 45′00″ T. 161 N. T. 161 N. T. 160 N. T. 160 N. 48° 42′30″ 48° 42′30″ 48° 40′00″ 48° 40′00″ T. 160 N. 48° 37′ 30″ 95° 45′00″ 95° 42′30″ 95° 40′00″ This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1991 aerial photography. Culture annotation was acquired from the U.S. Department of Interior, Geological Survey. Public land survey system (PLSS) was acquired from the Minnesota Department of Transportation. The PLSS layer was edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information. Joins sheet 43, Wannaska SW SCALE 1:24000 WANNASKA, MINNESOTA 1 0 7.5 MINUTE SERIES KILOMETERS SHEET NUMBER 31 OF 46 QUADRANGLE LOCATION North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle. MILES

**UNITED STATES** ROSEAU COUNTY, MINNESOTA WANNASKA NE QUADRANGLE SHEET NUMBER 32 OF 46 DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE Joins sheet 20, Salol 95° 35′00″ ³10 95° 32′30″ ³13 95°30′00″ ³16 95° 37′ 30″ 48° 45′00″ T. 160 N. 48° 42′30″ 48° 42′30″ 95°32′30″ 95° 35′00″ This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1991 aerial photography. Culture annotation was acquired from the U.S. Department of Interior, Geological Survey. Public land survey system (PLSS) was acquired from the Minnesota Department of Transportation. The PLSS layer was edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information. Joins sheet 44, Skime SCALE 1:24000 WANNASKA NE, MINNESOTA 7.5 MINUTE SERIES KILOMETERS SHEET NUMBER 32 OF 46 QUADRANGLE LOCATION North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle. MILES

**UNITED STATES** ROSEAU COUNTY, MINNESOTA MULLIGAN LAKE NW QUADRANGLE SHEET NUMBER 33 OF 46 DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 95° 27′30″ Joins sheet 21, Warroad SW 95°30′00″ 95° 25′00″ 95°22′30″ 48° 45′00″ T. 161 N. T. 160 N. T. 160 N. 48° 42′30″ 48° 42′30″ 48° 40′00″ ู้ 95°27′30″ <sup>32</sup>2 95° 25′00″ 95°22′30″ This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1991 aerial photography. Culture annotation was acquired from the U.S. Department of Interior, Geological Survey. Public land survey system (PLSS) was acquired from the Minnesota Department of Transportation. The PLSS layer was edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information. Joins sheet 45, Mulligan Lake SW SCALE 1:24000 MULLIGAN LAKE NW, MINNESOTA 7.5 MINUTE SERIES KILOMETERS SHEET NUMBER 33 OF 46 QUADRANGLE LOCATION 0 North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle. MILES

**UNITED STATES** ROSEAU COUNTY, MINNESOTA MULLIGAN LAKE NE QUADRANGLE SHEET NUMBER 34 OF 46 DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE Joins sheet 22, Warroad SE 95°22′30″ 95° 20′ 00″ 95°15′00″ 48° 45′00″ T. 161 N. T. 161 N. T160 N. T 160 N. 48° 42′30″ 48° 42′30″ 48° 40′00″ 95° 20′00″ This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1991 aerial photography. Culture annotation was acquired from the U.S. Department of Interior, Geological Survey. Public land survey system (PLSS) was acquired from the Minnesota Department of Transportation. The PLSS layer was edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information. Joins sheet 46, Mulligan Lake SCALE 1:24000 MULLIGAN LAKE NE, MINNESOTA 7.5 MINUTE SERIES KILOMETERS SHEET NUMBER 34 OF 46 QUADRANGLE LOCATION North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle. MILES

**UNITED STATES** ROSEAU COUNTY, MINNESOTA WINTER ROAD LAKE NW QUADRANGLE SHEET NUMBER 35 OF 46 DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE Joins sheet 23, Swift 95°12′30″ T. 160 N. T. 160 N. -48° 42′30″ 48° 42′30″ 48° 40′00″ <sup>33</sup>7 95°12′30″ This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1991 aerial photography. Culture annotation was acquired from the U.S. Department of Interior, Geological Survey. Public land survey system (PLSS) was acquired from the Minnesota Department of Transportation. The PLSS layer was edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information. SCALE 1:24000 WINTER ROAD LAKE NW, MINNESOTA 7.5 MINUTE SERIES KILOMETERS SHEET NUMBER 35 OF 46 QUADRANGLE LOCATION 0 North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle. MILES



UNITED STATES ROSEAU COUNTY, MINNESOTA TWISTAL SWAMP QUADRANGLE SHEET NUMBER 37 OF 46 DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE Joins sheet 25, Pelan 96° 27′ 30″ 96°30′00″ 48° 37′ 30″ <sup>5384–</sup>48° 35′00″ 48° 35′00″ T. 158 N. 48° 32′30″ 48° 30′00″ 96° 27′30″ <sup>⊛</sup>1 96° 25′00″ 96° 22′30″ This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1991 aerial photography. Culture annotation was acquired from the U.S. Department of Interior, Geological Survey. Public land survey system (PLSS) was acquired from the Minnesota Department of Transportation. The PLSS layer was edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information. SCALE 1:24000 TWISTAL SWAMP, MINNESOTA 7.5 MINUTE SERIES KILOMETERS SHEET NUMBER 37 OF 46 QUADRANGLE LOCATION North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 14. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle. MILES

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE

## FEATURE AND SYMBOL LEGEND FOR SOIL SURVEY

Soil Survey Area: Roseau County
State: MH

Date: 2002

DESCRIPTION SYMP			SYMBOL		DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL
SOIL SURVEY FEATURES					CULTURAL FEATURES (Optional)		HYDROGRAPHIC FEATURES (Optional)	
SOIL DELINEATIONS	DsD DrD Fe W			BOUNDARIES  National, state or province		Drainage end (indicates direction of flow) Perennial stream	-	
STANDARD LANDFORM AND MISCELLANEOUS SURFACE FEATURES				County or parish		Intermittent stream		
Bedrock escarp	111111	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	************	Minor civil division		Unclassified stream		
Non-bedrock es	scarpment	tnt «xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx			Reservation (national or state		Perennial drainage or irrigation ditch	
Gully			~~~~	forest or park)		To the state of th		
Levee	1111111	шиниши		Limit of soil survey (label) and/or denied access areas	<del></del>	Intermittent drainage or irrigation ditch		
Short steep slop	****	• • • • • • •	• • • • • • •			34-3 M-3 300 V 54 S (3 0 M) - 54 S (3 0 M)		
Blowout	<b>⊎</b> ⊠			Field sheet matchline and neatline		Unclassified drainage or irrigation ditch	•	
	Borrow pit				Public Land Survey System		Flood and line	PLDDD POOL LINE
Clay spot	ine				Public Land Survey System Section Boundary		Flood pool line	
Closed depressi Gravel pit	aon		×		Public Land Survey System Section Corner Tics	L	Spring	0-
Gravelly spot					Section Corner Tics		- Spring	
Landfill		0				Well, artesian	•	
Lava flow		Å						
Marsh or swam		₩-				Well, irrigation	•	
Mine or quarry	*			TRANSPORTATION				
Miscellaneous v	0							
Perennial water		•		Divided road Normally not shown				
Rock outcrop		•		Process of American Control				
Saline spot		<u>*</u>		Other road Normally not shown				
Sandy spot	**************************************	×			Trail			
Severely eroded	d spot		*		Normally not shown			
Sinkhole Slide or slip		\$ 3>						
Sodic spot		2		Partiette & through fortuner				
Spoil area	1			ROAD EMBLEMS				
Stony spot	0				pos			
Very stony spot	۵			Interstate	$\Box$			
Wet spot		₩		Federal	~			
					State	0		
						0		
AD HOC FEATURES	(Describe on back)				County, farm or ranch			
LABEL SYM	MBOL ID SYMBOL	LABEL	SYMBOL ID	SYMBOL				
	1 <		23	ô				
	2 🏻		24	•				
	3 🗆		25	•	LOCATED OBJECTS			
	4 🕱		26	0				
	s u		27	<b>Φ</b>	Airport, airfield	+		
	6 🗷		28	8	Cemetery	Ð		
	7 8		29	8	Church	•		
	8 2		30		Farmstead, house (omit in urban areas)	•		
	9 🕱		31	0	Lighthouse	Ē.		
	10 ↔		32	8	Located object (label)	Ranger Station		
	11 🕷		33		Lookout tower Oil and/or natural gas well	M A		
	12 😕		34	Θ	Other Religion (label)	▲ Mt.		
	13 🔾		35	0	School	Carmel		
	14 •		36	+	Soil sample site (compiled only not publish	ed) ®		
	15 X		37	+	Tank (label)	Petroleum		
	16 👗		38	O	Windmill	¥		
	17 A		39	•				
	18 *		40	п				
	19 🕱		41	**				
	20 🔉		42	+				
	21 🖾		43	٠				
	22		44	•				

**UNITED STATES** ROSEAU COUNTY, MINNESOTA STRATHCONA QUADRANGLE SHEET NUMBER 39 OF 46 DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE Joins sheet 27, Greenbush 96°10′00″ 96° 07′ 30″ 48° 35′00″ 48° 32′ 30″ 48° 32′30″ 48° 30′00″ 96°10′00″ This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1991 aerial photography. Culture annotation was acquired from the U.S. Department of Interior, Geological Survey. Public land survey system (PLSS) was acquired from the Minnesota Department of Transportation. The PLSS layer was edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information. SCALE 1:24000 STRATHCONA, MINNESOTA 1 0 7.5 MINUTE SERIES KILOMETERS SHEET NUMBER 39 OF 46 QUADRANGLE LOCATION 0 North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 14. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle. MILES

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**UNITED STATES** ROSEAU COUNTY, MINNESOTA THIEF LAKE QUADRANGLE SHEET NUMBER 41 OF 46 DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE Joins sheet 29, Thief Lake NW 95° 57′30″ ²82 95°55′00″ ²85 95°52′30″ <sup>288</sup> 96° 00′ 00″\_ 48° 37′ 30″ 48° 37′ 30″ 48° 35′00″ 48° 35′00″ 48° 32′30″ 48° 30′00″ 95°57′30″ 95°55′00″ 95°52′30″ This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1991 aerial photography. Culture annotation was acquired from the U.S. Department of Interior, Geological Survey. Public land survey system (PLSS) was acquired from the Minnesota Department of Transportation. The PLSS layer was edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information. SCALE 1:24000 THIEF LAKE, MINNESOTA 1 0 7.5 MINUTE SERIES KILOMETERS SHEET NUMBER 41 OF 46 QUADRANGLE LOCATION 0 North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle. MILES

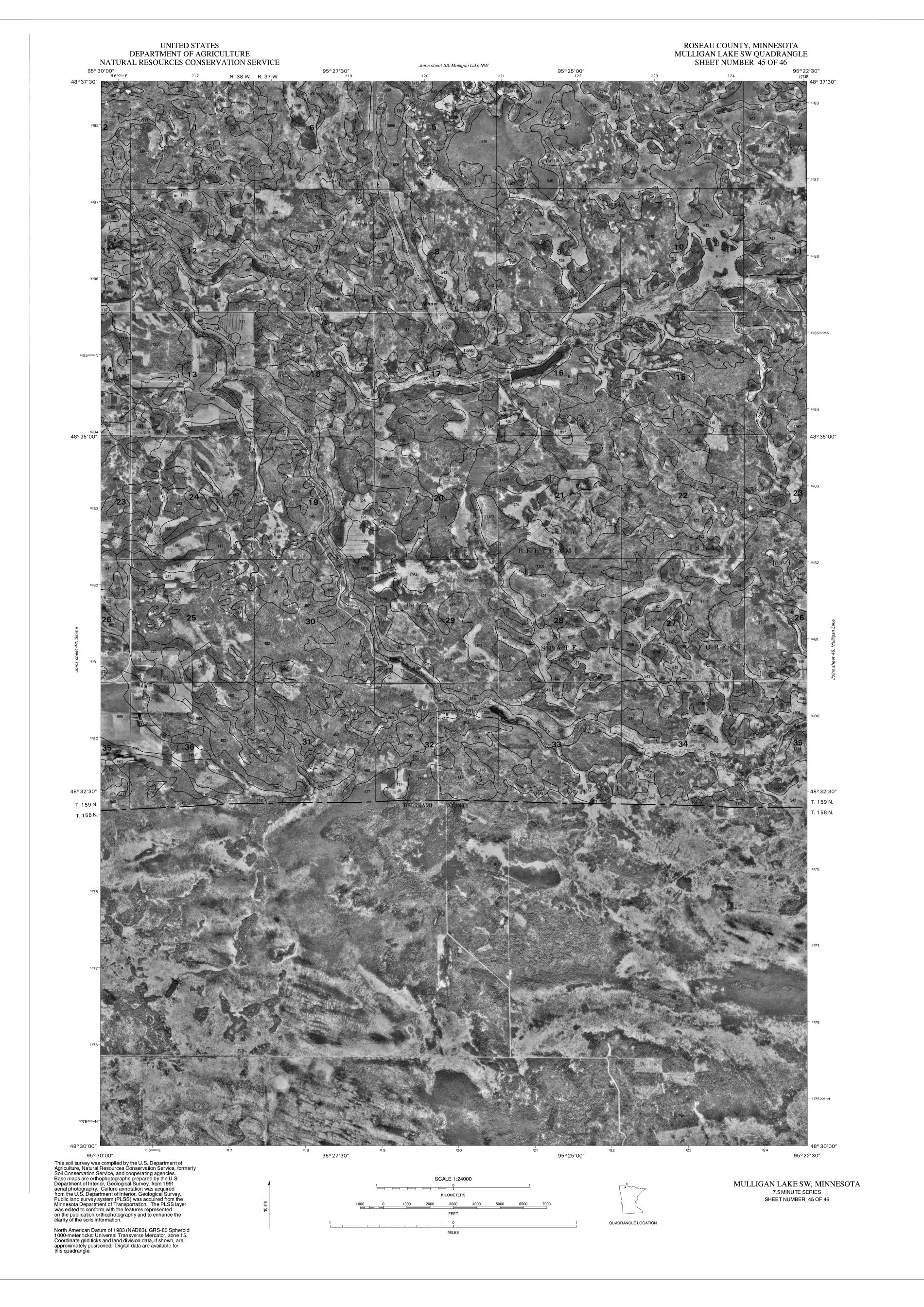
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**UNITED STATES** ROSEAU COUNTY, MINNESOTA THIEF LAKE SE QUADRANGLE SHEET NUMBER 42 OF 46 DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE Joins sheet 30, Thief Lake NE 95° 47′30″ 95°50′00″ <sup>2</sup>91 95°52′30″ 95° 45′00″ 48° 37′30″ 48° 35′00″ 48° 35′00″ 48° 30′00″ 95° 47′30″ 95°52′30″ 95°50′00″ 95° 45′00″ This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1991 aerial photography. Culture annotation was acquired from the U.S. Department of Interior, Geological Survey. Public land survey system (PLSS) was acquired from the Minnesota Department of Transportation. The PLSS layer was edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information. SCALE 1:24000 THIEF LAKE SE, MINNESOTA 1 0 7.5 MINUTE SERIES KILOMETERS SHEET NUMBER 42 OF 46 QUADRANGLE LOCATION 0 North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle. MILES

**UNITED STATES** ROSEAU COUNTY, MINNESOTA WANNASKA SW QUADRANGLE SHEET NUMBER 43 OF 46 DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE Joins sheet 31, Wannaska 95° 45′00″ 95° 42′30″ 95° 40′00″ 48° 35′00″ 48° 35′00″ 48° 32′30″ T. 159 N. T. 158 N. 48° 30′00″ <sup>l</sup> <sup>3</sup>00 95° 42′30″ <sup>30</sup>3 95° 40′00″ This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1991 aerial photography. Culture annotation was acquired from the U.S. Department of Interior, Geological Survey. Public land survey system (PLSS) was acquired from the Minnesota Department of Transportation. The PLSS layer was edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information. SCALE 1:24000 WANNASKA SW, MINNESOTA 1 0 7.5 MINUTE SERIES KILOMETERS SHEET NUMBER 43 OF 46 QUADRANGLE LOCATION 0 North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle. MILES

**UNITED STATES** ROSEAU COUNTY, MINNESOTA SKIME QUADRANGLE SHEET NUMBER 44 OF 46 DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE Joins sheet 32, Wannaska NE 95° 37′ 30″ 95°35′00″ 95° 30′00″ - 5384 48° 35′00″ 48° 35′00″ T. 159 N. 95°32′30″ <sup>30</sup>9 95° 35′00″ 95° 37′30″

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1991 aerial photography. Culture annotation was acquired from the U.S. Department of Interior, Geological Survey. Public land survey system (PLSS) was acquired from the Minnesota Department of Transportation. The PLSS layer was edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information. SCALE 1:24000 SKIME, MINNESOTA 7.5 MINUTE SERIES KILOMETERS SHEET NUMBER 44 OF 46 QUADRANGLE LOCATION North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle. MILES



ROSEAU COUNTY, MINNESOTA MULLIGAN LAKE QUADRANGLE SHEET NUMBER 46 OF 46 **UNITED STATES** DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE Joins sheet 34, Mulligan Lake NE 95° 22′30″ 325 000m E 95°15′00″ 48° 37′ 30″ 48° 35′00″ 48° 35′00″ 48° 32′30″ T. 158 N. 95° 20′00″ 95°17′30″ This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1991 aerial photography. Culture annotation was acquired from the U.S. Department of Interior, Geological Survey. Public land survey system (PLSS) was acquired from the Minnesota Department of Transportation. The PLSS layer was edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information. SCALE 1:24000 MULLIGAN LAKE, MINNESOTA 7.5 MINUTE SERIES KILOMETERS SHEET NUMBER 46 OF 46 QUADRANGLE LOCATION North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle. MILES